

## **EXHIBIT A**



United States Department of Agriculture  
Animal and Plant Health Inspection Service

PGLADUE  
2016090000664753 Insp\_id

### Inspection Report

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BUTTONWOOD PARK ZOO  
425 HAWTHORN ST  
NEW BEDFORD, MA 02740

Customer ID: 11495

Certificate: 14-C-0131

Site: 001

BUTTONWOOD PARK ZOO

Type: ROUTINE INSPECTION

Date: 21-JUL-2021

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There were no non-compliant items identified during this inspection.

This inspection and exit briefing were conducted 7/21/21 with facility representatives.

\*END OF REPORT\*

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Prepared By: PAULA GLADUE

USDA, APHIS, Animal Care

Date:

23-JUL-2021

Title: VETERINARY MEDICAL  
OFFICER

Received by Title: Curator

Date:

23-JUL-2021



United States Department of Agriculture  
Animal and Plant Health Inspection Service

Customer: 11495  
Inspection Date: 21-Jul-2021

### Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
11495	14-C-0131	001	BUTTONWOOD PARK ZOO	21-JUL-2021

Count	Scientific Name	Common Name
000008	<i>Callimico goeldii</i>	GOELDI'S MONKEY
000003	<i>Callithrix pygmaea</i>	PYGMY MARMOSET
000002	<i>Leontopithecus chrysomelas</i>	GOLDEN-HEADED TAMARIN
000006	<i>Saguinus imperator</i>	EMPEROR TAMARIN
000002	<i>Saguinus oedipus</i>	COTTON-TOP TAMARIN
000006	<i>Callicebus donacophilus</i>	REED TITI
000002	<i>Phoca vitulina</i>	HARBOR SEAL
000001	<i>Bos taurus</i>	CATTLE / COW / OX / WATUSI
000001	<i>Oryctolagus cuniculus</i>	DOMESTIC RABBIT / EUROPEAN RABBIT
000001	<i>Canis latrans</i>	COYOTE
000001	<i>Vulpes vulpes</i>	RED FOX (INCLUDES SILVER FOX & CROSS FOX)
000005	<i>Vulpes zerda</i>	FENNEC FOX
000002	<i>Puma concolor</i>	PUMA / MOUNTAIN LION / COUGAR
000002	<i>Lynx canadensis</i>	CANADIAN LYNX
000003	<i>Lynx rufus</i>	BOBCAT
000002	<i>Castor canadensis</i>	AMERICAN BEAVER
000001	<i>Sus scrofa</i>	WILD BOAR
000001	<i>Bison bison</i>	AMERICAN BISON
000001	<i>Ursus americanus</i>	NORTH AMERICAN BLACK BEAR
000002	<i>Elephas maximus</i>	ASIAN ELEPHANT
000001	<i>Didelphis virginiana</i>	VIRGINIA OPOSSUM
000003	<i>Lontra canadensis</i>	NORTH AMERICAN RIVER OTTER
000003	<i>Ailurus fulgens</i>	RED PANDA
000002	<i>Pudu pudu</i>	SOUTHERN PUDU
000003	<i>Choloepus hoffmanni</i>	HOFFMANN'S TWO-TOED SLOTH
000001	<i>Dasypus novemcinctus</i>	NINE-BANDED ARMADILLO
000002	<i>Aotus nancymae</i>	NANCY MA'S NIGHT MONKEY
000002	<i>Mephitis mephitis</i>	STRIPED SKUNK
000002	<i>Odocoileus virginianus</i>	WHITE-TAILED DEER
000071	<b>Total</b>	



United States Department of Agriculture  
Animal and Plant Health Inspection Service

Customer: 11495  
Inspection Date: 21-Jul-2021

**Species Inspected**

Cust No	Cert No	Site	Site Name	Inspection
11495	14-C-0131	001	BUTTONWOOD PARK ZOO	21-JUL-2021

## **EXHIBIT B**



United States Department of Agriculture  
Animal and Plant Health Inspection Service

PGLADUE  
2016090000746244 Insp\_id

### Inspection Report

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BUTTONWOOD PARK ZOO  
425 HAWTHORN ST  
NEW BEDFORD, MA 02740

Customer ID: 11495

Certificate: 14-C-0131

Site: 001

BUTTONWOOD PARK ZOO

Type: FOCUSED INSPECTION

Date: 27-OCT-2021

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This was a focused inspection of the elephants and elephant facilities. No non-compliant items identified during this inspection.

This inspection and exit briefing were conducted 10/27/21 with facility representatives.

\*END OF REPORT\*

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Prepared By: PAULA GLADUE

USDA, APHIS, Animal Care

Date:  
27-OCT-2021

Title: VETERINARY MEDICAL  
OFFICER

Received by Title: Facility Representative

Date:  
27-OCT-2021



United States Department of Agriculture  
Animal and Plant Health Inspection Service

Customer: 11495  
Inspection Date: 27-Oct-2021

### Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
11495	14-C-0131	001	BUTTONWOOD PARK ZOO	27-OCT-2021

**Count**  
000002

**Scientific Name**  
*Elephas maximus*

**Common Name**  
ASIAN ELEPHANT

000002

**Total**

## EXHIBIT C

- a. Zoo and Aquarium Management I- 1997
- b. Institutional Record Keeping- 2003
- c. Institution Collection Planning-2005
- d. Principles of Elephant Management I- 2006
- e. Recon (Elephant Management Workshop)-2016
- f. Principles of Elephant Management II- 2017

4. Since 2013, I have been the Zoo's Elephant Manager tasked with oversight of the staff and elephant management program. The program that I have assisted in developing and implementing provides elephant care in a manner that is safe for both the elephants and their caretakers. It is designed to allow handlers opportunities to observe the animals closely for the detection of physical or psychological changes and to strengthen the emotional bond between the handlers and the elephants. The program also provides for the daily care necessary to maintain the elephants' health and well-being.

5. In keeping with AZA's policy "Maximizing Occupational Safety of Elephant Care Professionals At AZA-accredited and AZA-certified Facilities" the BPZ has successfully transitioned to managing its elephants in a restricted contact system. Keepers use their knowledge of elephant behavior, and the tendencies of our individual elephants together with positive reinforcement, to provide daily care, enrichment, and training in as safe a manner as possible, without sharing space with the elephants.

6. The Buttonwood Park Zoo's elephant management program meets and exceeds the Association of Zoos and Aquariums' (AZA's) standards for elephant management and care. (Exhibit A- AZA Standards for Elephant Management and Care)

7. The Buttonwood Park Zoo's elephant management program meets and exceeds the United States Department of Agriculture's (USDA), Animal and Plant Health Inspection's (APHIS) regulations for animal management and care. (Exhibit B- USDA Inspection reports for July 2021 (general) and October 2021 (focused inspection on elephants)

8. On September 24, 2019, after taking three days of evidence and hearing from this same Plaintiff and multiple experts presented by the City, the Hon. William G. Young issued a thoughtful, in depth 32 page decision finding that there was no violation of the Endangered Species Act as alleged by Ms. Rowley. In the decision, Judge Young commended the City for the positive changes to the Zoo's elephant management program noting that the City "has supported it's Zoo with an adequate budget; has attracted a cadre of dedicated, professional, and empathetic and innovative zookeepers; and has employed top-notch veterinarians wherever necessary." (Exhibit C- Case 1:17-cv-11809-WGY Document 91 Filed 09/24/19)

9. Since the ruling, the Zoo has continued to provide the best possible husbandry and medical care to Emily and Ruth who, at 57 and 63 respectively, who are now two of the oldest elephants in the captive population in our country. The Zoo continues to make positive changes to the program of care including:

2019

- Hired a Staff Veterinarian with significant zoo animal and elephant experience
- Addition of automated food dispensers
- Addition of a remote camera system which is available to the keepers in those instances when they need to monitor the elephants

- Brought in a consultant to provide staff training for restricted contact and foot care

2020

- Replacement of a portion of the radiant heat system
- Testing of the low temperature and replacement of the building security
- Replacement of one of the radiant heaters
- Continued the relationship with MA College of Arts for the Toys for Elephants (although fabrication of the designs for 2020/2021 were interrupted by COVID)
- Implemented a community browse program for harvesting fresh bamboo and other browse species for the elephants and red pandas
- Purchased a portable digital x-ray system capable of radiographing elephant feet.

2021

- Training and integration of an additional elephant keeper
- Implementation of overnight access to the habitats for the elephants based on temperature and weather conditions

10. **Asian Elephant #5** Ruth is a 63-year-old elephant, the second oldest in the population here in the United States. She has resided at the Buttonwood Park Zoo since 1986. I have been actively involved in her care since 1994.

11. In late January of 2021, my keeper staff noted a defect on the left front foot's second nail (Digit #2) of Asian Elephant "Ruth". Following our established husbandry protocols and at my direction, keepers initiated daily foot soaks and reported it to the veterinarian Dr. Lipanovich. The elephant was examined by Dr. Lipanovich, and the foot was checked and treated daily.

12. Throughout February, the nail lesion showed signs of improvement, but was resolving slowly. As a precaution Dr. Lipanovich prescribed an oral antibiotic.

13. During the first two weeks of March, the condition of the foot worsened and there was a significant amount of inflammation present. Dr. Lipanovich made a presumptive diagnosis of proliferative pododermatitis and prescribed cryotherapy with twice daily medicated foot soaks. Oral antibiotics were continued, and additional topical antibiotics prescribed.

14. At that time, Dr. Lipanovich began consulting with outside elephant and veterinary experts including: Kirk Suedmeyer, Ellen Weidner, Lydia Young, Susan Mikota, James Oosterhuis, Dennis Schmitt, Carlos Sanchez, Jennifer D'Agostino, and Betsy Stringer. I also reached out to elephant foot care expert Mike McClure to see if he was available for an in-person consultation. Director Keith Lovett approved any, and all resources including flying in medical personnel as needed to evaluate and assist with the medical treatment of Ruth.

15. On May 11, 2021, Mike McClure did an on-site foot evaluation on both elephants. In discussions with staff, he indicated that in his experience proliferative pododermatitis is an age-related change in elephants with poor conformation. He felt that in Ruth's case this may have been developing for many years and had been exacerbated by changes to her gait from developing osteoarthritis. He also advised us that treatment of her condition was going to be a long-term process and could take at least 9-12 months to resolve if at all. In addition, he advised that in an animal this age, changing her conformation is not really feasible and may make the condition worse. He stated that Ruth will most likely be chronically predisposed to repeated episodes of this issue. He also warned us to be prepared for issues developing in her other feet due to uneven weight distribution from the effort of shifting her weight from the affected foot to the other feet. Mr. McClure agreed to maintain his relationship with the Zoo and to come to New Bedford, as needed, to work with staff to manage her corrective foot trimming in conjunction with her medical treatment plan.

16. At that time, due to the progression of a potentially very serious foot condition in the older elephant "Ruth", the decision was made in accordance with our policy, to allow trained staff members to share restricted and unrestricted space with this geriatric animal as prescribed by the Staff Veterinarian to provide foot care while laying down to improve her health and welfare while effectively treating her condition.

17. On August 9, 2021, elephant veterinarian Dr. Jim Oosterhuis was brought in to assess Ruth's condition and offer suggestions for treatment. (Exhibit D- Elephant Consultation Report)

18. On August 27, 2021, elephant veterinarian Dr. Dennis Schmidt, Mike McClure, Dr. Cooper Williams met with a medicated carbon dioxide equipment representative on site for consultation. Changes were made to the treatment plan switching to a more potent drying agent called Equine Canker powder. Gas perfusion using medical grade carbon dioxide canisters was started initially at once daily for 5 days for 20 minutes, tapered to three times weekly for the next month and then twice weekly until further notice. Mohs paste was also used in specific locations for local tissue debridement. Cryotherapy was to continue at daily to every other day, depending on what the tissue was doing.

19. Ruth's foot responded favorably to the treatment plan throughout September, October and November of 2021.

20. I attest that the following summary provided by Dr. Lipanovich below for Asian Elephant #5 Ruth is accurate.

**"From April to the middle of November, this patient was evaluated almost every day by veterinary staff as well as upper management. Many different topical therapies were initiated: metal cryotherapy, spray cryotherapy, manuka honey, mupirocin ointment, Clean Tracks™, Epsom salts™, Betadine, chlorhexidine, Excede™, apple cider vinegar, gentamicin, and ichthammol. She has been on three different antibiotics: trimethoprim sulfa, enrofloxacin and metronidazole. She has been on ibuprofen, tramadol and gabapentin for pain relief. She**

was also placed on intermittent stall rest to decrease activity and discourage tissue proliferation and alleviate some pain for patient.

Radiographs for 2021 of the feet have been taken on: April 25, June 4, July 16, July 27, August 6, August 9, August 27, September 23, October 28, November 4, November 16, December 7. Outside radiographic consultants have been used since August 27<sup>th</sup> for every radiograph taken.

Blood analysis for 2021 have been performed on: January 19, May 6, June 8, June 17, July 16, July 29, August 25, October 5, October 26, November 16, December 7.

Tissue biopsies for 2021 have been performed on: May 13, July 27, and September 23.

The lesion has been cultured for 2021 on: May 7, June 4, and July 29.

For 2021 to date, Mike McClure has been onsite for assessments of this elephant's feet on: May 11, June 19, July 16, August 6, August 27, September 30, and November 6.

Weight loss has been a slow decline from March 2019 at 2960 kg. Weight loss decreased significantly while on antibiotics with weight starting at 2752 kg and dropping to 2644 kg in October 2020. She has gained weight since then after cessation of antibiotics to 2726 kg and an increase in some of the diet."

21. Asian Elephant #4 Emily is a 57-year-old elephant, within the top ten oldest elephants in the population in the United States. She has resided at the Buttonwood Park Zoo since 1968. I have been actively involved in her care since 1994.

22. On July 1, 2021 a review of bloodwork results showed an early indication of inflammation occurring. Keepers were instructed by Dr. Lipanovich to monitor Emily closely.

23. On July 15, 2021, the day before a consult with Mike McClure, the keepers reported that Emily was shifting her weight abnormally and she was exhibiting a slight decrease in weight bearing on the left front foot.

24. During his examination on July 16, 2021, Mike McClure identified a defect in digit 4 that was developing a small proliferative pododermatitis lesion at the base of the nail. Keepers were instructed to monitor the area and continue with corrective trimming as needed along with daily foot soaks.

25. From July 26, 2021 through August 2, 2021, all rechecks of the lesion showed it was stable.

26. On August 4, 2021, bloodwork results from blood samples collected on July 28, 2021 indicated higher than normal inflammatory markers and Dr. Lipanovich prescribed an anti-inflammatory.

27. On August 6, 2021, Mike McClure evaluated all four of Emily's feet, and right front foot radiographs were taken. Later submitted to Chicago Radiology for consult.

28. On August 9, 2021 Dr. James Oosterhuis performed a veterinary consult. See attached report. (Exhibit D- Elephant Consultation Report)

29. On August 27, 2021, elephant veterinarian Dr. Dennis Schmidt, Mike McClure, Dr. Cooper Williams and a medicated carbon dioxide equipment representative were brought on site for consultation. They felt it was quiescent at this time and recommended continuing with current treatment plans and monitoring closely.

30. September 19, 2021, keepers noted that Emily's right front foot lesion was starting to increase in size and appeared to be growing out normally. Dr. Lipanovich discontinued the foot soakings and switched to canker powder application multiple times throughout the day.

31. On September 23, 2021, additional radiographs were taken of Emily's right front foot lesion. They were submitted to Chicago Radiology for consult.

32. Blood samples were collected and submitted on September 28, 2021.

33. Mike McClure evaluated all four of Emily's feet on September 30, 2021. Bloodwork results from September indicated that inflammation was back to normal. No further anti-inflammatories were needed at this time.

34. Radiographs of Emily's right front foot were taken on October 28, 2021, and submitted to Chicago Radiology for consult. Blood was collected for monitoring.

35. November 6, 2021, Mike McClure evaluated all of Emily's feet. He recommended restarting foot soakings and continue with canker powder application.

36. I attest that the overall summary provided by Dr. Lipanovich below for Asian Elephant #4 Emily is accurate.

**"From initial presentation in July to date, this patient has been evaluated regularly. Treatments have ranged from foot soakings with Epsom salt, apple cider vinegar, betadine, and dilute chlorhexidine, to canker powder application. She has been intermittently treated with anti-inflammatories as needed.**

**Radiographs were taken for 2021: June 22, June 23, August 6, September 23, and Oct 28.**

**Blood analysis was performed for 2021: January 30, June 30, July 28, August 4, September 28, and October 28.**

**Mike McClure has assessed feet for 2021: May 11, June 19, July 16, August 6, August 27, September 30, November 6. "**

**37.** I have reviewed the December 29, 2021 First Amended Complaint For Injunctive & Declaratory Relief filed by Ms. Rowley. Based upon my own experience and work with the elephants, I find the following statements / claims to be false and / or inaccurate:

**Claim: “there have been substantial changes to the elephant exhibit and management to the detriment of both elephants.”**

- Disagree- there have been no significant changes to the exhibit
- The only change in animal management has been the prescribed free contact in order to better address Ruth’s feet.

**Claim: “Notably, the facilities housing them became dilapidated, management of the facilities and elephants changed and, as a result, both elephants now present with pododermatitis- a painful foot disease.”**

- Disagree- the facilities housing the elephants are not dilapidated and did not cause pododermatitis in the elephants.
- Multiple consultants have agreed that the predisposing factor in Ruth’s case is bio-mechanical in nature due to severe conformation deviations

**Claim: “In Ruth’s case, her left front foot became infected and due, to the Defendant’s actions, progressed to sepsis osteitis.” Two of her toe bones in her left foot dissolved. “**

- Disagree- there was no negligence, and Ruth was never diagnosed with sepsis osteitis. This was a possible differential diagnosis considered in the 8/20/2021 radiology report from Brookfield. Subsequent reports stated that active osteomyelitis was less likely given that osseous changes are similar in all the studies. There is no question that there have been changes to the surface of the bones with some resorption. However, the bones have not “dissolved”. Ms. Rowley has pulled the term septic osteitis from one of the first Brookfield reports. It was listed as a possible cause for what appeared to be some bone loss. Later radiographs confirmed that the bones were still present hidden by dense tissue.

**Claim- “Since the Defendant failed to acknowledge Ruth’s foot was infected for over four months, the infection spread to her right foot.”**

- Disagree- In June 2021 it was noted that Ruth’s right front foot also had pododermatitis- this was due to a bio-mechanical issue not infection. It was anticipated based on her weight distribution to compensate for the left front foot and the foot consultant and staff were pro-actively monitoring and treating with corrective trimming to keep the area as quiescent as possible. Ms. Rowley inaccurately conflates the terms inflammation and infection.

**Claim- “The infection then spread to Emily’s front right foot.”**

- Disagree- Emily’s feet were examined by a foot care specialist in May 2021, radiographs were taken in June 2021. She was assessed again in July 2021; August 2021 and more radiographs were taken. She was also examined by an elephant veterinarian in August 2021. Additional radiographs were taken in September, and she was assessed by a foot care specialist in

September, October and November. The defect in her right front foot is stable/healing and while there is and has been inflammation there has never been an infection.

#### **Factual Background**

**6. Captive elephants kept on concrete or sand are more likely to have foot problems. If kept standing in moisture and excrement, particularly on hard substrate, captive elephants are predisposed to pododermatitis, also called canker or hoof rot. Other primary factors are lack of exercise and poor nutrition.**

Ms. Rowley is citing S.M Mikota and M Fowler from the Biology, Medicine & Surgery of Elephants chapter 20. However what Ms. Rowley neglects to include in this citing is where it is noted that

“Elephants with conformational faults tend to develop foot problems as they begin to age (30-40 years) because they walk in such a manner that unequal weight is distributed to unaffected limbs.”

**9. “When confined to the outer area, the only water available is from a drain-pipe at the water feature.”**

- Disagree- There is an opportunity for both elephants to access fresh potable water on both sides of the habitat. The drain-pipe Ms. Rowley is referencing is a freshwater feed carrying city water which is treated, tested and acceptable for human consumption.

**12. “Ruth and Emily spend at least 16 hours each day in the concrete barn while the zoo is closed. In the winter, that increases to 20 hours or more due to inclement weather. In severe weather, they are kept inside for 24 hours, sometimes days at a time.”**

- Disagree- The elephants have access to one or both outside yards when the Zoo is closed weather permitting on an alternating schedule. The city agrees that during inclement weather and on days when the temperatures are below freezing, the elephants remain inside.

**15. “The barn’s concrete floor was partially removed and replaced with a soil floor in 2012. It becomes compacted by the weight of two elephants standing and walking on it.” According to zookeeper’s Daily Logs received under MGL 66, Public Records Access Act, the floor is hosed down, but it is unclear whether this removes the elephants’ waste entirely. Hosing may cause additional compaction creating a hard substrate. “**

- Disagree- The floor of the barn is not soil- it is sand. The barn floor does not become compacted, and it is not a hard surface. Waste contaminated sand is removed daily. The sand is hosed to prevent excess dust and to activate the disinfectant used to promote absorption into the substrate.

**16. “When the steel bars and gates were installed, it made it particularly difficult for the front-end loader to enter Ruth’s stall, turn and remove soil.”**

- Disagree- there is no truth to this statement

**17. Previously, the soil was removed from the stalls and placed outside until it was taken off-site. The last time this occurred was March 2019.**

- Disagree- there has been major re-grading and rotation of both sand and loam after March 2019. In addition, daily sand re-grading and rotation is performed inside the stalls

Major rotation occurred 5/7/2019

Major rotation 6/25/2019

Major sand rotation 7/31/2019

Fresh Loam added to yard 10/28/2019

Major sand rotation 1/9/2020

Major sand rotation 5/28/2020

Fresh Loam added to yard 5/28/2020

Major sand rotation 9/4/2020

Major sand rotation 12/9/2020

Major sand rotation 1/14/2021

Fresh Loam added 6/14/2021

Major sand rotation 6/18/2021

Major Sand rotation 7/24/2021

Major sand rotation 8/27/2021

Fresh Loam added 9/9/2021

**18. Now, the soil is "rotated" moving it to piles on the interior yard and then back into the barn. (Exhibit 3. Sample Daily keeper log)**

- Disagree- Ms. Rowley is not qualified to interpret the daily keeper logs and is in fact misinterpreting the notation. Keepers rotate the sand inside the barn after waste and contaminated sand has been removed to ensure that the sand does not become compacted. They "fluff" the sand pile beds as well. They will bring in fresh sand that is piled outside of the yard as needed. Contaminated sand, discarded hay, and excrement is removed to the dumpster- it is never dumped in the yard except during a major. rotation coordinated with DPI to ensure that the used sand is removed from the site.

**19. Between January 14 and June 18, 2021, the soil was not removed from the barn. On June 18 it was removed and placed in piles in the elephants' yard. It was not rotated again until two months later, according to the daily logs.**

- Disagree- Contaminated sand is removed from the barn daily and larger-scale rotation is done several times per year, or more often if needed.

**20. The accumulation of waste contaminated soil caused a sandfly infestation for several months.**

- Disagree- There was no waste contaminated soil in the video Ms. Rowley is referencing and there is absolutely no way she can determine that anything in the video is a "biting sandfly"

**21. The elephant barn roof has leaked for over two years. A bid to repair it and several other roofs was rejected as too high in August 2021 (Exhibit 4, Bid Awards, City of New Bedford Purchasing Department website) The leak is reported to be over the concrete viewing area. The plans for the new roof indicated that there are other areas of the roof that leak. A recent bid for the elephant barn roof was awarded on November 15, 2021**

- Disagree- At the present time, there is a seam where the small addition on the building meets the existing barn that leaks during heavy rain events creating a puddle in the keeper workspace – not the elephant habitat. This has been addressed by the Department of Facilities and Fleet Management for both the short and long term. It was also inspected by USDA during one of the heaviest rain events of the year.

**22. There are two other pipes that also drain water into Ruth's stall from an unknown source, as seen at the March 2019 visit. The roof plans do not call for their removal, despite Ruth's hoof condition.**

- Disagree- There are not two pipes draining water into Ruth's stall

**23. Asian elephant Ruth Ruth is a 60- year-old female who was captured in 1961. She first shows up in historic newspaper records at Benson's Wild Animal Park in Hudson, NH in 1963 with circus trainer Silvers Madison. According to Bret Bronson, former elephant handler at Benson's, her import papers indicated her birth year as 1960. This was corroborated by Angela Speigel a former employee of the East India Camel Co., Ruth's second owner**

- Disagree-Bret Bronson did not indicate that Ruth's "import papers indicated her birth year as 1960". He has stated that she arrived at Benson's in 1960 and was anywhere from 2-4 years old which puts her birth date at approx. 1958, which is consistent with her arrival report to the Buttonwood Park Zoo

**24. When brought to the Defendant's Zoo in 1986, Ruth weighed just 5,900lbs. She was considered as being in "poor condition, malnourished". Although at times she weighed up to 7200lbs., Ruth weighed 6400lbs in December of 2019. She weighed 5816lbs at the time the Complaint was filed.**

- City agrees that Ruth has lost weight. She is now 5997lbs and on an upward trend. Her temporary weight loss in 2021 was due in large part to long-term antibiotic therapy. 6400-6800 is the optimum weight range for this animal and now that antibiotics have been discontinued, it is anticipated she will continue to gain weight toward that number.

**25. For the past two years, Ruth has been restricted from moving, eating, and drinking while on exhibit.**

- Disagree- This is not true. Ms. Rowley has repeatedly accused Zoo staff and Volunteers of using "mind control", hand signals and verbal commands to force Ruth to stand immobile for hours. Director Lovett and I have both had in person conversations and written correspondence with Ms. Rowley attempting to explain that what she is alleging is not the case and is not possible.

**26. According to the Zoo's records, Ruth and Emily receive only 80-100lbs of grain, supplements and produce. Asian elephants eat up to 330lbs. of grasses and grains per day.**

- In addition to the grain, the elephants also receive fresh browse, have opportunities to graze, receive additional food items during training and for enrichment. The elephants' diets are reviewed annually and adjusted throughout the year by qualified professionals and are calorically balanced for each individual elephant.

**27. But on occasions when Ruth was ordered to stand in place, she was not fed, nor could she graze. On other occasions, she was ordered to turn away from her food or move away from it.**

- Disagree- Depriving Ruth of food or water or access to it goes against our elephant management policy, animal management policy, and animal welfare philosophy. Our management system is protected or restricted contact and utilizes the principals of operant conditioning with positive reinforcement. There are no verbal or visual cues that would hold or force an elephant to remain still for hours at a time.

**30 "But January 27, 2021, show new nail defects caused by hoof work by a keeper. The Defendant then failed to perform even the minimal rotation of the barn dirt floor until June 18, 2021, although Ruth was receiving treatment for canker"**

- Disagree- the defects in the nail were uncovered by a keeper performing routine foot work on the elephant. They were evaluated by the veterinarian and the elephant was receiving treatment (foot soaks) and the areas identified were responding to treatment.
- The elephant barn floor is sand not dirt. Contaminated sand is removed from the barn daily and the sand is rotated within the barn as keepers' re-grade and move the sand around daily, so there was in fact more than minimal rotation of the sand.

**31. Between January 27 and April 27, the Defendant did little to heal Ruth's hoof. Notes indicate that it was trimmed by keepers, soaked, but no radiographs, cultures or biopsies were performed.**

- Disagree- The animal was under the care of a veterinarian who was examining the animal daily and consulted with both elephant and veterinary experts to develop a treatment plan. The animal was receiving medicated foot soaks, topical treatments and antibiotics, oral antibiotics, and cryotherapy.

**32. May 9 and May 11 clinical notes show that additional consultants recommended against trimming. (Exhibit 8, Clinical notes dated May 9 and May 11, 2021). Yet the Defendant trimmed the canker six times between June and July, although she noted there was still a risk of osteitis. In that time Ruth's nail bed blew out (Exhibit 9. Photos dated June 12 and July 12, 2021).**

Disagree- From the May 9<sup>th</sup> clinical notes "no trimming with a knife unless absolutely necessary, use cryotherapy and/or medical maggot therapy

From the May 11<sup>th</sup> clinical notes **Front Left (D2):** There should not be any more trimming done to the lesion or the immediate area for at least 2 weeks. The remaining small piece of nail in the center should be left to loosen on its own as more tissue fails. The large piece of nail that is still intact posterior to the lesion was long on the bottom, putting it in contact with the substrates in a way that was causing the

affected tissue to shift/move with each step. We shaped the remaining bottom edge of the nail to shorten it and bevel it up into the nail face to try to reduce some of that movement to allow the affected tissue to "rest". The associated pad in that same area was shortened and blended back into the center of the pad.

Two weeks would be May 25<sup>th</sup>- there was no trimming performed during that time period.

Between June 1, and July of 2021:

- June 1, 2021- piece of tissue came loose after cryotherapy and was removed
- June 4, 2021- biopsy taken for histopathology
- June 19, 2021, trimming, filing and shaping was done in consultation and conjunction with the elephant foot specialist
- July 12, 2021, there was a large section of necrotic tissue that was sloughing off - Trimmed about 4 by 8 cm section of tissue and 2 cm in depth. No bleeding.
- July 16, 2021, approximately 6 by 8 cm section of proliferative, necrotic tissue was removed in consultation and conjunction with the elephant foot specialist
- July 18, 2021, Small amount of proliferative tissue was removed along the ventral edges (about 1 cm in height and covering about 6 cm of the lesion).
- July 22, 2021, the left front D2 lesion had some trimming done to about 30% of it. The ventral medial necrotic section of tissue under the nail that is separate from the main lesion was trimmed
- July 27, 2021, Biopsy taken
- July 29, 2021, removed approximately 2 cm of the crabmeat tissue where applicable along the middle area and scraped several millimeters of grey necrotic tissue off the top. Removed the loose skin adjacent to digit 3 with no response. Noted there was a concomitant section of dry, flaky almost, crabmeat-like section underneath this. Removed about a 2 cm triangular shaped area of tissue and about 1 cm deep. The necrotic tissue under the nail and along the slipper margin was trimmed. Mild amount of bleeding in a few places. No tissue hanging down any longer.

During the above timeframe there was "trimming" that consisted of removal of pad and nail which is part of routine foot husbandry and has been done in consultation with the foot specialist. There is also trimming or debridement of necrotic tissue that is done to provide a clear surface for cryotherapy.

**33. Defendant continued to trim the canker another 15 times over the next three months, sometimes "aggressively"**

City agrees as it was medically warranted, and part of the on-going treatment plan developed in consultation with the experts.

**34. On May 7, four months after the canker started, the Defendant took a culture, which indicated Ruth's foot was infected by at least one agent. The result was ignored, although the canker was malodorous. A month later on June 4 a second culture was taken indicating the presence of three strains of bacteria. The clinical notes on June 10 indicate these were disregarded as "contaminants" On June 24, 2021, Ruth's right foot also had proliferative pododermatitis.**

Disagree- The animal was receiving appropriate care and treatment before and up to May 7th for an on-going and developing medical condition. The animal was on antibiotic therapy prior to the C & S and on an antibiotic that the organism was sensitive to for treatment.

- Animal was started on a broad-spectrum antibiotic on February 15
- Animal was started on topical antibiotics on April 26<sup>th</sup>
- Animal was started on an additional antibiotic on April 30<sup>th</sup>
- Culture & Sensitivity taken on May 7<sup>th</sup> showed growth of *Citrobacter amalonaticus* which is sensitive to the antibiotic prescribed to Ruth on April 30<sup>th</sup>.
- Biopsy submitted on May 13<sup>th</sup>- results showed No argyrophilic fungal hyphae or bacterial organisms were detected in the examined sections via GMS stain and Gram stain, respectively.
- June 4<sup>th</sup> another C & S was taken that showed no anaerobic bacteria (these are bacteria that do not live or grow when oxygen is present and are the type of bacteria you would find associated with infections) and growth of aerobic bacteria *Pantoea agglomerans*, *Citrobacter freundii* and *Enterococcus* which are common occurring organisms in the environment and sensitive to the antibiotics that the animal was being treated with.

**Still the Defendant denied it was from infection (Exhibit 10, Clinical records dated June 4, June 10, and June 24, 2021).**

- Agree- there was no infection at that time. It was an inflammatory process.

**35. When a third culture taken at the end of July indicated strains of bacteria known to cause osteitis, the Defendant finally acknowledged Ruth's foot was infected, but continued trimming, knowing there was a risk of osteitis. (Exhibit 11, Clinical notes dated July 29, 2021)**

Disagree there was no diagnosis of an infection and trimming/debridement was an appropriate part of the on-going treatment plan.

- Biopsy submitted on July 27<sup>th</sup> showed that no fungal elements are present in the examined sections. And low numbers of mixed morphology bacteria are present along the ulcerated surface.
- C & S submitted on July 29<sup>th</sup>- again anaerobic bacteria grown, aerobic bacteria grown was *Klebsiella pneumoniae*, *Aeromonas*, *Citrobacter*. Again, common surface organisms and 2/3 are sensitive to the drugs the elephant is on. *Klebsiella* can cause infection, however Ruth's bloodwork taken at the same time as the culture indicate there were no signs of infection.
- Bloodwork submitted on July 29<sup>th</sup> to University of Miami for acute phase proteins and fibrinogen- Results showed that the total protein and A/G ratio are normal for this species. No globulinopathies are present. This EPH does not support the presence of inflammation or infection.

**37. But by June 4, Ruth's outermost toe bone was already gone. (Exhibit 12, Brookfield report dated August 6, 2021, refers to P3 (toe bone) gone "two months ago")**

Disagree-Ms. Rowley is referring to the history provided by the Veterinarian who believed based on radiographs that the P3 toe bone was missing. (This is exactly why radiographs have been taken repeatedly over the last 11 months. Ms. Rowley is also attempting to draw conclusions from radiographic reports which she is not qualified to interpret. She is referencing bone loss, which was determined to be from radiographic technique, not infection. The inflammatory tissue was so dense it was blocking the bones from view. In the August report the Radiologist gave their impressions based on the radiographs submitted:

2. Indistinct P3 of Digit A can be either due to inflammatory erosive osteitis or septic osteitis (or distal interphalangeal septic arthritis). Alternatively, depending on the extent of the proliferative dermatitis, the P3 may have been lost due to a large cutaneous defect or surgical debridement.
3. Digit A distal P2 articular erosion; consider inflammatory erosive osteitis, septic distal interphalangeal erosive arthropathy, or septic osteitis.

- In October, the radiologist gave the following impression

There is greater detail and resolution of the anatomy in the current study; this is likely related to the decreased swelling of the soft tissue and the collimation of the radiographs. The greater detail resolution makes osseous changes more apparent and easier to identify.

Loss of bone of the P3, P2, and distal P1 of D2 - portions of the lysis involve the articular surfaces of the distal interphalangeal joint and proximal interphalangeal joint. This can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. Alternatively, previous/active osteomyelitis is possible. The osseous changes are similar to the previous study making an active osteomyelitis less likely

**38. On August 6, when additional radiographs were taken, the Defendant's veterinarian for the 3<sup>rd</sup> time claimed no osteomyelitis was present. (Exhibit 13, August 6, 2021, clinical records.) By this time the infection had taken another toe bone on that digit, according to the report DACVR Eric T. Hostnik of Brookfield Zoo.)**

Disagree- see above

**39. The Defendant continued trimming, even after receiving the DACVR's report finding septic osteitis, with surgical debridement as a possible cause in late August.**

- Disagree- the DACVR's report did not "find septic osteitis with surgical debridement as a possible cause" It recommended considering consider inflammatory erosive osteitis, septic distal interphalangeal erosive arthropathy, or septic osteitis as a potential cause for the Digit a P2 articular erosion. Again, later reports indicate the bones of the toe are present with some lytic changes that can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. It specifically states that active osteomyelitis is less likely to the similarity of osseous changes from previous studies submitted.

**40. In fact, the Defendant's veterinarian ordered "stall rest" beginning in August, unheard of for osteitis and canker. Ruth was forced to stay in the same fetid conditions that caused the infection that trimming forced into her toe bones. She developed cellulitis, an infection of the connective tissue, Ruth has not presented with cellulitis in records dating back to 2005.**

- Disagree, stall rest is not unheard of and in fact the typical treatment for canker in large hoof stock consists of three components, surgical debridement, keeping the feet/hoves dry and topical therapy. Stall rest is typically recommended to keep the animal out of mud and water. There are no "fetid conditions" in the barn, and they did not cause "the infection that trimming forced into her toe bones"
- There was no diagnosis of cellulitis.

**43. What is clear is that Ruth's infection in her front left foot has spread not only to her right foot in July, but to Emily's right foot too.**

- Disagree -in June it was noted that Ruth's right front foot also had pododermatitis- this was due to a bio-mechanical issue not infection. It was anticipated based on her weight distribution to compensate for the left front foot and the foot consultant and staff were pro-actively monitoring and treating with corrective trimming to keep the area as quiescent as possible. Ms. Rowley does not seem to understand the difference between inflammation and infection.

**45. Emily has been on a reduced diet for six years.**

- Disagree- Emily receives a nutritionally balanced diet for her age and caloric needs. The diet is assessed annually and adjusted as needed throughout the year taking into consideration her medical condition, activity level, type of seasonal produce and browse availability and routine hay analysis.

**46. In July 2021, Emily was first diagnosed with pododermatitis (Exhibit 17, clinical records dated July 16, 2021). No trimming or cryotherapy was performed although Emily had a nail canker and was visibly in pain. In this video taken on July 15, 2021, she is seen holding her right front foot up.**

- Disagree- Emily was assessed in May 2021 and radiographs were taken in June 2021
- Emily has received regular treatment

**47. Beginning in August 2021, Emily was separated from Ruth during the day by a metal gate between the outer yard and area near the barn. No records were available to plaintive for the period August 28 to September 15, 2021. (Exhibit 18 Clinical records August 28-September 9, and September 9 to September 25, 2021)**

- Disagree- there were no clinical notes entered into the medical record because there was nothing medical to report. Plaintiff received keeper daily reports with information on Emily for that time period.

**50. The Defendant City has attempted to attribute Ruth's pododermatitis and subsequent osteitis to her hoof conformation (pigeon-toed) stance). If etiology of the pododermatitis was not due to the presence of moist unsanitary conditions on hard packed substrate in the barn, Emily would not have presented with it- she is able to exercise, eat her full allotment of food, drink at will and is not pigeon-toed.**

- Disagree- It is a documented fact that elephants with conformational faults tend to develop foot problems as they begin to age because they walk in such a manner that unequal weight is distributed to unaffected limbs. It is a fact that Ruth has skeletal conformation abnormalities. Ms. Rowley is not qualified to conjecture or discuss etiology.

**63. Claim I Defendant City has taken Ruth and Emily in violation of Section 9 of the ESA: Unsanitary barn; failure to repair roof., forced confinement**

- Disagree- the barn is sanitary; roof repairs are on-going and there is no forced confinement.

**64. Ruth's long list of injuries-loss of the use of her trunk, loss of half her tail, loss of half of her right ear, now includes loss of at least two toe bones. Emily may be losing toe bones, or worse if her pad is infected.**

- Disagree- Ruth's trunk paralysis pre-dates her time here. The Defendant agrees that the loss of part of her tail and a portion of her ear occurred during her time at the Zoo. Ruth has not lost two toe bones. Emily does not have a pad infection

**65. This current harm was entirely preventable and was caused by the Defendant's actions and inactions. By not repairing the roof for over two years, not removing water sources in Ruth's stall, failing to remove the barn flooring for six months; failing to take waste-contaminated soil off site; failing to recognize Ruth's weight loss for two years despite visibly worsening body condition, and failing to let Ruth exercise, the Defendant City created perfect conditions for hoof rot. The Defendant then ignored recommendations from nine consulting veterinarians and experienced zoo staff at other zoos; ignored two sets of cultures and biopsies for three months and misread radiographs for four months, all of which caused bacteria to proliferate and infect Ruth's left front foot toe bones for osteitis to spread, for Ruth's right front foot to become infected, and for the bacterial infection to spread to Emily's right front foot.**

- Disagree- Barn roof repairs were conducted during the two-year period
- There is only one water source in Ruth's stall, and it is a freshwater feed to provide her with water when she chooses to drink from it rather than the automatic waterer.
- Sand rotation and re-grading occurs daily and larger scale rotation every few months

- Waste contaminated sand is removed daily and when large scale rotation occurs it is removed by DPI
- Ruth's weight has been monitored over the last two years closely. Zoo staff and the Veterinary team were monitoring her weight loss, adjusting diet accordingly and balancing it with the need for antibiotic therapy.
- With the exception of prescribed stall rest, the Defendant has not restricted Ruth's movements,
- The Defendant absolutely did not ignore recommendations from consultants and has worked closely with them throughout Ruth's treatment
- The Defendant did not ignore cultures and biopsies and ensured that the animal was receiving the appropriate antibiotics that the aerobic bacteria were sensitive to
- The Defendant did not misread the radiographs as they were presented. Neither the Veterinarian nor the radiologist could visualize P2 or P3 of Digit 2 due to technique and/or dense proliferative tissue.
- A diagnosis of osteitis has never formally been made- the inflammation is in the surrounding tissues
- Ruth's right front foot is not infected
- Emily's right front foot is not infected.

**66. Plaintiff asserts that these acts were part of an overall plan by the Defendant to intentionally cause Ruth harm-injury and death, although finding of a "take" does not require intent.**

- Disagree- Defendant has provided appropriate care and treatment exceeding all current standards for the care and management of Asian elephants in a captive setting.

**67. As a result of the Defendant's actions, Emily also developed pododermatitis and suffered harm.**

- Disagree- the pododermatitis was not the result of the Defendant's actions

**68. Claim II. Take caused by Defendant City harms and harasses Ruth and Emily in violation of 9 of the ESA: Inadequate shelter in inclement weather, lack of exercise, food deprivation.**

**69. The City harms and harasses Ruth by confining her in a facility that exposes her to extreme heat and extreme cold without shelter and significantly disrupts her normal behavior patterns including sheltering and feeding.**

- Disagree- Ruth is not exposed to extreme heat and cold without shelter
- The Defendant does not significantly disrupt her behavior patterns or deprive her of food.

**70. Ruth was routinely forced to stand still for up to four hours under the roofless hut, and also at the barn door, in extremely hot weather including during heat advisories, and extremely cold weather. During those times, she was prohibited from moving. This forced lack of exercise caused or exacerbated her arthritis in her joints and significantly contributed to her pododermatitis and osteitis.**

- Disagree- The Defendant did not force Ruth to stand still for four hours or prohibit her from moving

**71. Further Ruth was deprived of food, water, and the ability to cool during that time, which caused her to lose 15% of her body weight. The resulting poor nutrition and poor body condition also significantly contributed to her pododermatitis and osteitis.**

- Disagree- The Defendant has never deprived Ruth of food, water, or the ability to cool herself.
- Food and water deprivation was not the cause of weight loss for this animal
- Ruth's nutrition is not poor and did not significantly contribute to her pododermatitis

**73. On several occasions in August 2020, Ruth was kept inside the barn during 100-degree temperatures for hours with the barn doors closed. She was not allowed access to water to cool. When she was released, she immediately sought water to cool. The barn is not air conditioned.**

- Disagree- there was never a day the temperatures were over 100 in New Bedford in August 2020
- Agree- during high heat index days, Ruth will sometimes prefer to remain in the barn where temperatures are cooler
- Disagree- Ms. Rowley cannot determine that access to water inside the barn is denied (which it is not)
- Agree- the barn is not air conditioned as there is no need for it.

**74. This intentional refusal to provide adequate nutrition and exercise resulted in a 532lb weight loss in the past two years, and a poor body condition. This radical weight loss was not identified as problematic until October 2021. This neglect significantly contributed to the pododermatitis and osteitis.**

- Disagree the Keepers and Veterinary staff have been closely monitoring Ruth's weight and adjusting her diet accordingly while she has been receiving long term antibiotics. In a hind gut fermenter such as an elephant. Long term antibiotic therapy changes the gut flora and can lead to weight loss. As expected, once antibiotics were discontinued, the animal has steadily gained weight.

**75. Emily was confined to the outer yard, an 8,000 s.f. area, for eight hours each day during the same periods of Ruth's confinement. This lack of exercise and exposure to extreme temperatures caused or exacerbated her arthritis and contributed to her hoof rot on her right front. Emily's reduced diet led to a 10% weight loss and rapid decline in her body condition that also contributed to her pododermatitis, an ongoing condition.**

- Disagree- Emily has not been exposed to extreme temperatures.
- Emily's did not have a rapid decline in body condition and weight loss did not contribute to her pododermatitis.

I hereby swear that the above statements are true based upon my personal knowledge and experience as well as my review of the relevant written records.

Sworn on this 20<sup>th</sup> day of January, 2022.

  
SHARA RAPOZA

## EXHIBIT D

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**18 August 2021**

## **ELEPHANT CONSULTATION REPORT**

FOR

**BUTTONWOOD PARK ZOO  
NEW BEDFORD, MASSACHUSETTS**

FOR

**FEMALE ASIAN ELEPHANTS  
“RUTH” and “EMILY”**

ON

**9 August 2021**

### **REPORT CONTENTS**

- **INTRODUCTION**
- **HISTORY**
- **OVERALL FINDINGS**
- **EXAM OF FEET**
- **FACILITIES**
- **TREATMENTS**
- **STAFF INSTRUCTIONS**
- **ASSESSMENTS**
- **PROPOSED PLAN**

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**MEDICAL/HUSBANDRY RECORD OF INSPECTION**

**BUTTONWOOD PARK ZOO**  
**FEMALE ASIAN ELEPHANTS**

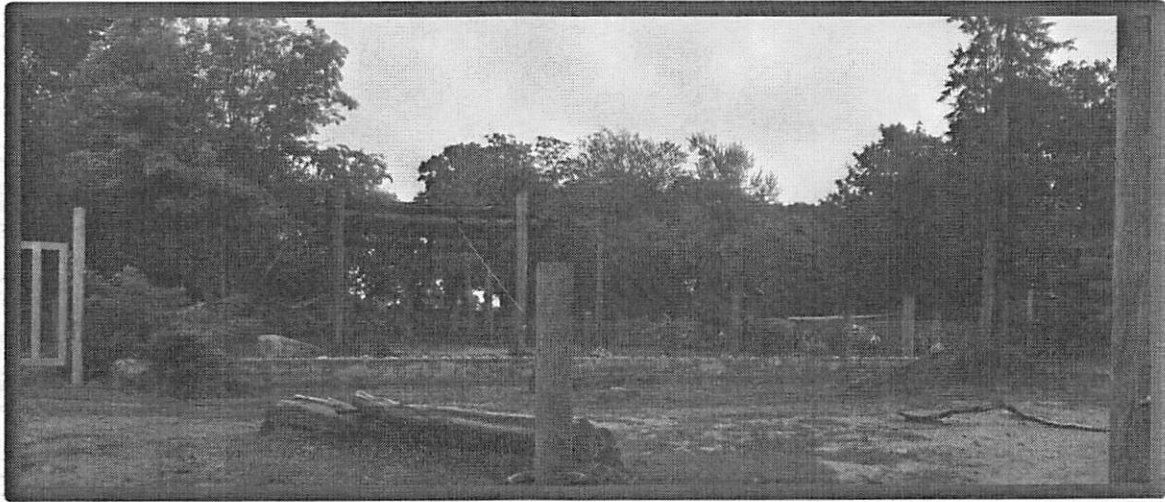


NEW BEDFORD, MASSACHUSETTS

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<b><u>Date of Inspection:</u></b>	<b>9 August 2021</b>
<b><u>Species:</u></b>	<b>Asian Elephants</b>
<b><u>Identification:</u></b>	<b>Females, "Ruth", age 63 yrs and "Emily", age 57 yrs</b>
<b><u>Date of Report:</u></b>	<b>18 August 2021</b>

Veterinary Consulting Services



**Buttonwood Park Zoo**

**Introduction:**

I examined the above elephants at the Buttonwood Park Zoo in New Bedford, Massachusetts, on 9 August 2021. Present for the examination was the Zoo's Veterinarian, the Assistant Zoo Director and the Zoo's Elephant Care Staff. This was my first examination of the feet of "Ruth", a 63 year old, female Asian Elephant, and "Emily", a 57 year old, female Asian Elephant.

In July of 2021 the Zoo asked me to examine both elephants in order to evaluate the problems that they are having with their feet and to give my opinion of the status and severity of their foot issues.

This report is my written evaluation of their current foot conditions as found by my exam done on the 9<sup>th</sup> of August 2021 and my recommendations for a continuing management plan for them.

**History:**

Both "Ruth and "Emily have lived at the Buttonwood Park Zoo for most of their lives. It is my understanding that both came into captivity as rescued orphans.

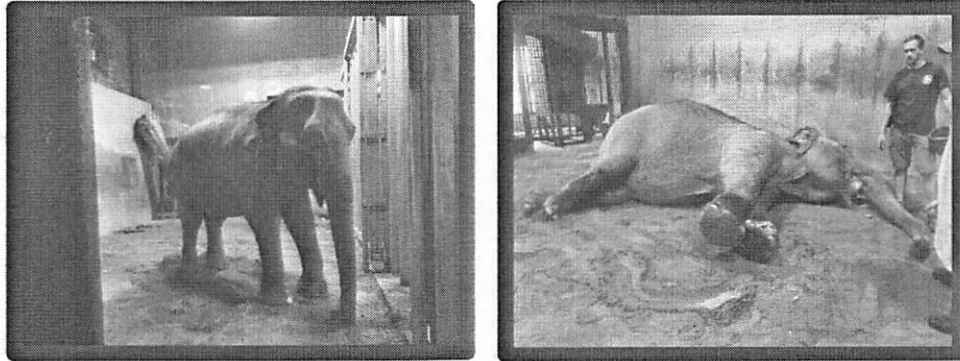
They have both developed foot issues in the recent years, which have been controlled by the Elephant Staff. However, lately Ruth's left front foot has developed an issue with the #2 digit that has not responded to their usual foot care program. To help them out, the Zoo has brought in an Elephant Foot Care specialist. Since then the toe has regressed but then the problem expanded. I was then asked to come in as a Veterinary Elephant Care Specialist.

**Overall Findings:**

Ruth, during my exam, was a calm, slow moving elephant that was managed in a "free contact" system for most of her life, but is now in a "protected contact" management system, except for the times that she needs foot care, which is done when she is lying down. She lays down on command for the foot care sessions and still has the ability to get up after the treatments. Unfortunately, she has a severe conformational problem of being pigeon toed and also has excessive medial twisting of the carpal joints on her front legs, especially with the left front leg. This results in abnormal pressure on her front feet. She also walks with stiffness in both front legs, with the left front having the most stiffness.

Emily's issues with her feet are less of a problem, but she does have some issues that need to be corrected.

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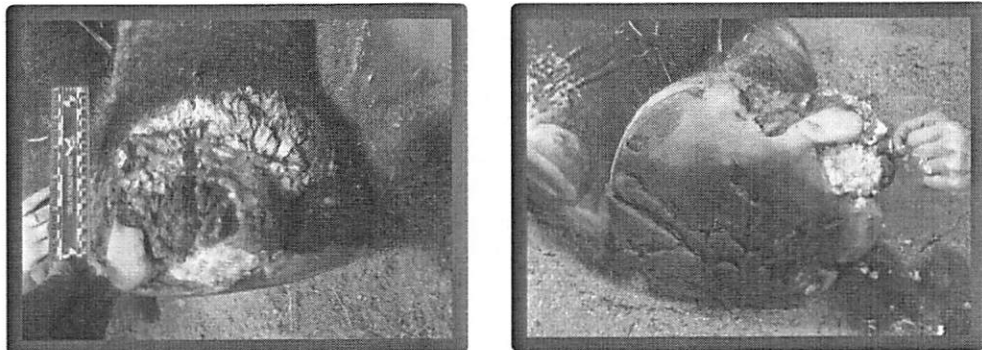


Ruth Inside for Foot Care

Exam of Ruth's Feet:

Examination of Ruth's front feet reveals that she has had a severe "abscess" associated with her left front foot digit #2. The staff and veterinarian and their foot care consultant have been trying to arrest the advancement of the problem, but it continues to become worse. There is a large amount of reactive, proliferative tissue, usually referred to as "crab meat", that has dramatically developed over the last few days. She has a bed of normal granulation tissue at the nail/pad junction that is very tender and bleeds easily. The #2 nail is completely gone, except for a small segment that is being undermined and will eventually come off. She currently has a defect on her left front foot, nail #5, also.

Radiographs were taken of Ruth's left front foot, both carpi and her right patella.

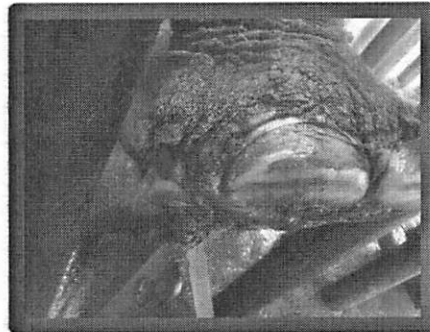
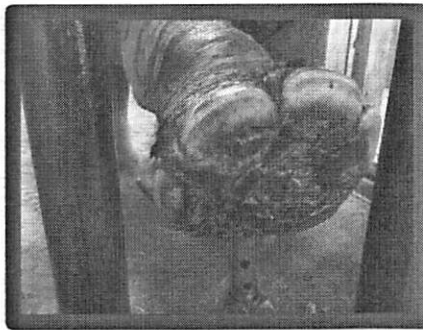


Ruth's Left Front Foot Digit #2

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Exam of Emily's Feet:

It appears at this time that Emily's main issues involve the control of the excessive "feathering" of her cuticles and a possible nail separation at the cuticle on her right front foot, nail #4.

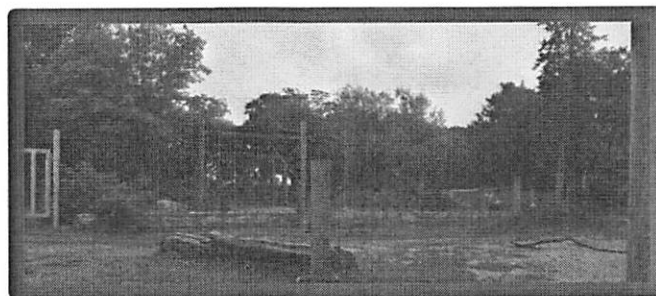


Emily's Right Front Foot Digit #4

Facilities:

Ruth and Emily's outside area consists of large grass and sand exhibit yards, with a sand pile for resting, a pole structure, and shaded areas. They also have numerous exhibit enrichment items in their outside yards.

Their inside quarters consist of soft sand substrate and a "chute" that acts as a restraint device.



Elephant Habitat at Buttonwood Park Zoo

Treatments:

Ruth is currently on anti-inflammatory, pain medications and antibiotics at appropriate levels, for her toe and joint issues. She is on regular examinations and treatments of her front feet, including abscess trimming and cryotherapy, regular nail trimming and foot soaking.

Emily is on a regular foot care program by the Elephant Staff as directed by the Foot Care Specialist, who visits on a semi regular basis.

I administered no medications during my inspection.

Veterinary Consulting ServicesStaff Instructions:

In my verbal instructions to Staff, I reinforced the importance of movement to aid in blood perfusion of both elephant's feet, but to not to overdo the exercise with Ruth. Exercise is also important for Ruth due to the arthritis found in her carpi on both front legs.

I commend the Elephant Care and Veterinary Staffs on their dedication to give Ruth and Emily the best possible care that they can—both physical and mental. The Assessment section and the Proposed Plan section detail my suggestions for the future.

Assessments:

- Visual evaluation of Ruth reveals severe conformational problems in her front legs—pigeon toed stance and severe medial twisting of both front feet, with the left front the worst one.
- Ruth also walks with stiff front legs. This condition in elephants is usually due to some sort of painful experience that the elephant has encountered. It is my opinion that they do not want to flex the leg for fear of eliciting pain, so they don't bend the leg and after a time period, the leg becomes fixed in a straight position. The other reason for walking with stiff legs is due to arthritis in her carpal joints, this is probably the situation in Ruth's case. Flexing of arthritic joints in elephants appears to be painful. However, evaluating painful conditions in elephants can be a challenge.
- Historically, elderly elephants with poor conformation that develop toenail issues, getting the abscesses to heal out, is not possible. Rather, control of the problem is the usual game plan. If the abscess does heal, invariably it comes back.
- Most invasive toe abscesses affect the last bone in the toe (P3), resulting in fractures and deterioration of that bone. This is usually not a major consequence.
- If the toe abscess starts to affect the other bones of the toe (P2 and P1), this can result in severe osteomyelitis. This condition is very difficult to resolve with antibiotics and usually necessitates a major surgical procedure to remove the affected bones. A three to four hour anesthetic time for the surgery is anticipated. Aftercare is extensive and difficult to accomplish in a Protected Contact Management System, due to the daily cleaning and changing of the specially constructed boot to protect the surgical site. Healing takes months to accomplish.
- Radiographs of Ruth's left front foot, digit #2, reveals considerable boney changes with the ongoing damage starting to affect the bones in that digit. Mainly, it appears that P3, the last bone in the toe, has disintegrated and the next bone up, P2 is starting to become involved. More information will be available upon evaluation of the radiographs by a radiologist.
- Radiographs of both carpi in her front legs, reveals arthritis. This will also be categorized by the radiologist.
- Ruth is slow moving, which may be her "old age" nature, but she walks with stiff front legs, especially the left front. This may be a sign of pain due to the arthritis in her front legs and toes and the aggressive abscess in her left front foot, digit #2. (See above comments.)
- I did not observe Ruth having any abnormal behaviors or signs of being stressed, i.e. stereotypic behaviors.
- It is assumed that Ruth, at age 63, is having issues with her last set of molars, and may in fact not have the ability to properly chew her food items. It is impossible to evaluate her teeth visually due to her inability to raise her trunk in the usual "trunk up" position to expose an open mouth for evaluation of her teeth. Therefore the keepers are shredding her hay, and feeding small, cut up treats and pellets.
- The Staff is aware of all of the issues that I have brought up, and are concerned for her quality of life. They have started a program to evaluate and log her condition in a quantifiable manner to see how she progresses.

- If the severity of the abscess in her left front foot continues, despite intensive care by the Staff Veterinarian and the Elephant Staff and the Foot Consultant, and the radiologist confirms the changes in the bones of the toe and the status of the arthritis in her front legs, the Staff should consider humane euthanasia.
- The staff should be commended for their efforts.

**Proposed Plan:**

- **Ruth's Foot Problem:**
  - Continue to treat this as a medical problem, for now.
  - Continue antibiotics, pain meds and anti-inflammatories.
  - Continue with the aggressive foot care regarding the proliferative "crab meat" tissue.
  - Avoid damaging the granulation bed at the nail/pad junction.
  - Continue with utilizing the Foot Care Consultant and consider that on a bi-weekly basis.
  - Await the radiologists evaluation of the radiographs, regarding the bones of the foot and carpus.
  - Continue periodic blood samples for signs of systemic disease.
  - Repeat the toe and carpal radiographs at two week intervals.
  - Encourage some movement to maximize blood flow to her feet.
  - Continue to monitor her utilizing the Quality of Life protocol.
  - Maintain Ruth at the zoo due to her medical issues. She is in no condition to be moved.
- **Emily's Foot Issues:**
  - Emily's foot issues revolve around the feathering of her cuticles.
  - Keepers have been advised to use nippers rather than a hoof knife to trim the tags that have formed at her cuticles. The nippers do not have the sideways pull on the tags that a knife causes, thus there is less pain when cutting.
  - Continue her exercise program.

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**End of Report**

**James E. Oosterhuis, DVM  
Veterinary Consulting Services  
18 August 2021**

## Curriculum Vitae

# **J. E. Oosterhuis, D.V.M. Veterinary Consulting Services**

1 January 2022

### **SIGNALMENT:**

Name: James E. Oosterhuis, D.V.M.  
  
Address: Veterinary Consulting Services  
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U S A  
  
Phone: 619-972-1948  
Email: [jeo.dvm@cox.net](mailto:jeo.dvm@cox.net)

### **EDUCATION:**

Graduate Degree: **Doctor of Veterinary Medicine**  
1972  
University of Minnesota  
College of Veterinary Medicine  
St. Paul, Minnesota 55101  
  
Post Graduate Training: **Zoological Medicine Internship**  
1973 to 1974  
Zoological Society of San Diego  
San Diego Zoo  
P.O. Box 551  
San Diego, California 92112  
  
States Licensed to Practice In:  
Minnesota  
California

J.E. Oosterhuis, DVM

**PROFESSIONAL WORK EXPERIENCE:**

1992 to Present      Veterinary Consulting Services  
P.O. Box 130  
Ramona, California 92065-0130

Private consulting service established to provide my assistance to Zoos, Circuses, Private Individuals and Non-Profit Organizations holding Exotic Animals, and Wildlife Institutions dealing with indigenous Wildlife. (Some consulting dates back to 1975. See section on Consulting.)

2000 to 2020      Principal Veterinarian  
San Diego Zoo Safari Park (formerly, Wild Animal Park)  
Zoological Society of San Diego  
15500 San Pasqual Valley Road  
Escondido, California 92027

Practice of zoo animal medicine and surgery for the 1800 acre animal park, which has a total collection of 420 species and subspecies of birds, mammals and reptiles, totaling over 3500 specimens. Retired on 7 Dec 2020 after over 45 years at the Safari Park.

1983 to 2000      Director of Veterinary Services  
San Diego Wild Animal Park  
15500 San Pasqual Valley Road  
Escondido, California 92027

Department Head, supervising 23 employees of the Veterinary Services Department, San Diego Wild Animal Park. Responsible for the veterinary care of all animals kept at the Park with an annual Departmental budget of over \$1.2 million. Also, designed and supervised the building of the Paul Harter Veterinary Medical Center which opened in September of 2001 at the Wild Animal Park. This \$22 million facility is the largest zoo animal hospital in the world.

1975 to 1983      Associate Veterinarian  
San Diego Wild Animal Park  
15500 San Pasqual Valley Road  
Escondido, California 92027

Practice of zoo animal medicine and surgery for the 1800 acre animal park, which had a total collection of over 400 species and subspecies of birds, mammals and reptiles, totaling more than 3000 specimens.

J.E. Oosterhuis, DVM

1974 to 1975      Staff Veterinarian  
Gladys Porter Zoo  
500 Ringgold Street  
Brownsville, Texas 78520

Practice of zoo animal medicine and surgery as the staff veterinarian for the 30-acre zoo, which had a total collection of 1600 birds, mammals and reptiles.

1973 to 1974      Zoo Veterinary Intern  
San Diego Zoo  
Zoological Society of San Diego  
P.O. Box 551  
San Diego, California 92112

Practice of zoo animal veterinary medicine and surgery as the veterinary intern for the Zoo. This was a one-year training program under the supervision of the staff veterinarians at the San Diego Zoo.

1972 to 1973      Veterinarian  
Feist Animal Hospital  
1430 Marshall Avenue  
St. Paul, Minnesota 55104

Practice of veterinary medicine and surgery directly after graduation in a seven veterinarian small animal clinic, while I developed my career path plans to become a zoo animal veterinarian.

**PROFESSIONAL ORGANIZATIONS: (past and present)**

- American Veterinary Medical Association (AVMA)
- American Association of Zoo Veterinarians (AAZV)
- American Association of Wildlife Veterinarians (AAWV)
- American Zoo and Aquarium Association (AZA)
- California Veterinary Medical Association (CVMA)
- San Diego County Veterinary Medical Association (SDCVMA)
- United States Animal Health Association (USAHA)
- Wildlife Disease Association (WDA)

J.E. Oosterhuis, DVM

**WORKSHOPS LECTURED AT:**

- Bangkok, Thailand “Elephant Management and Foot Care”
- Denver, Colorado “Rhino Care Workshop”
- Hamburg, Germany “Elephant Diseases and Foot Care”
- Houston, Texas “Elephant Care and Management”
- Orlando, Florida “Mega-Vertebrate Anesthetic Workshop”
- Orlando, Florida “Rhino Care Workshop”
- Phoenix, Arizona “Elephant Diseases, Tusk and Molar Problems and Foot Care”
- Santa Barbara, California “Elephant Transports and Tusk and Molar Problems”

**USA ON-SITE CONSULTATIONS/SURGICAL PROCEDURES:**

- The Alaska Zoo, Anchorage, Alaska
- Animazonia Wildlife Foundation, Riverside, California
- Birmingham Zoo, Birmingham, Alabama
- Buttonwood Park Zoo, New Bedford, Massachusetts
- Circus Vargas, Ventura, California
- Clyde Beatty-Cole Bros. Circus, DeLand, Florida
- Disney’s Animal Kingdom, Orlando, Florida
- Ellen Trout Zoo, Lufkin, Texas
- El Paso Zoo, El Paso, Texas
- Fort Worth Zoo, Fort Worth, Texas
- Fresno Chaffee Zoo, Fresno, California
- Grant’s Farm, St. Louis, Missouri
- Have Trunk Will Travel, Perris, California
- The Hawthorn Corporation, Richmond, Illinois
- The Hawthorn Corporation, Sterling and Reid Circus, Round Lake, Illinois
- Hogle Zoo, Salt Lake City, Utah
- Indianapolis Zoo, Indianapolis, Indiana
- Jacksonville Zoo, Jacksonville, Florida
- Kansas City Zoo, Kansas City, Missouri
- Living Desert, Palm Desert, California
- National Zoo, Washington, DC
- Oakland Zoo, Oakland, California
- Oregon Zoo, Portland, Oregon
- Performing Animal Welfare Society, San Andreas, California
- Reid Park Zoo, Tucson, Arizona
- Ringling Bros. Circus, Sarasota, Florida
- Riverbanks Zoo, Columbia, South Carolina
- Santa Barbara Zoo, Santa Barbara, California
- Sea World, San Diego, California
- Johnny Welde, Bear Productions, Odessa, Florida
- Toledo Zoo, Toledo, Ohio

J.E. Oosterhuis, DVM

**ON-SITE INTERNATIONAL CONSULTATIONS/SURGICAL PROCEDURES:**

- Africam Safari, Puebla, Mexico
- Calgary Zoo, Calgary, Alberta, Canada
- Edmonton Valley Zoo, Edmonton, Alberta, Canada
- Hagenbeck's Tierpark, Hamburg, Germany
- Mexico City Zoos, Mexico City, Mexico

**INTERNATIONAL ELEPHANT TRANSPORTS:**

- Auckland, New Zealand to San Diego, California By Air
- Calgary, Alberta, Canada to Tampa Bay, Florida By Ground
- Calgary, Alberta, Canada to Washington, DC By Ground
- Melbourne, Australia to Miami, Florida By Air

**DOMESTIC ELEPHANT TRANSPORTS:**

- 49 Elephant Transports By Ground
- 1 Elephant Transport By Air from Anchorage, Alaska to San Andreas, California

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## **EXHIBIT E**

**UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS  
BOSTON DIVISION**

JOYCE ROWLEY,  
PLAINTIFF, PRO SE

CASE NO. 21-cv-11649-FDS

V.

CITY OF NEW BEDFORD, MASSACHUSETTS  
DEFENDANT

**FIRST AMENDED COMPLAINT  
FOR INJUNCTIVE & DECLARATORY RELIEF**

This is an Endangered Species Act (ESA) citizen suit action on the matter of captive Asian elephants Ruth and Emily at the Defendant City of New Bedford's Buttonwood Park Zoo. Judgement in a related case found that Ruth's and Emily's care did not harm or harass them, and the Defendant's elephant management met general animal husbandry practices.(C/N 17-cv-11809, Dkt 91).

However, there have been substantial changes to the elephant exhibit and management, to the detriment of both elephants. Notably, the facilities housing them became dilapidated, management of the facilities and elephants changed and, as a result, both elephants now present with pododermatitis—a painful foot disease. Neither elephant had pododermatitis or foot osteitis previously.

In Ruth's case, her left front foot became infected and, due to the Defendant's actions, progressed to septic osteitis. Two of her toe bones in her left foot dissolved. Since the Defendant failed to acknowledge Ruth's foot was infected for over four months, the infection spread to her right foot. The infection then spread to Emily's front right foot.

The Defendant's failure to prevent these injuries are a violation of Section 9 of the Endangered Species Act.

### **I. PARTIES**

Joyce Rowley, Plaintiff pro se, is a New Bedford resident and taxpayer, a member of the Buttonwood Park Zoological Society, and as noted in the related case decision, a "keen observer and frequent visitor" at the Zoo. In fact, she continued to visit Ruth and Emily on a daily basis, often spending one to two hours with them. The conditions Ruth and Emily live in affect Rowley aesthetically, emotionally, and spiritually. Thus, she still has legal standing granted in the related case (Id. Dkt.34).

Defendant City of New Bedford, is an incorporated Massachusetts municipality. It owns and operates the Zoo as a department in the City. Zoo employees are under the Defendant's control.

### **II. JURISDICTION**

This Court has jurisdiction over the case pursuant to ESA 16 USC § 1540(g)

and 28 USC § 1331 (federal question).

Venue in this court is proper pursuant to 16 USC § 1540(g)(3)(A) because the violations complained of occur and continue to occur in Bristol County, Massachusetts. Further, venue is proper under 28 USC § 1391 because a substantial part of the events or omissions giving rise to the claims occurred within this District and Division, and all parties reside here.

### **III. FACTUAL BACKGROUND**

1. Affected Species. Asian elephants (*Elephas maximus*) have been listed as endangered species under the ESA since 1976 (41 Fed. Reg. 24062, 24066. June 14, 1976) and listed as an Appendix I species in the Convention on the Trade of Endangered Species of Flora and Fauna (CITES) since its inception in 1975.

2. Elephants are a long-lived species. The average lifespan for a non-captive elephant is 60-70 years<sup>1</sup>, with some living to their 80s.<sup>2</sup> The population of Asian elephants in United States zoos is aging and shrinking, in large part due to the difficulty of breeding elephants in captivity, and premature deaths due to inadequate conditions in zoos<sup>3</sup>. Of the 321 elephant deaths studied in U.S. zoos

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<sup>1</sup> Vidya, TNC, & Sukumar, R., "Social and reproductive behavior in elephants," *CurrentScience*, 89:7, (2005) p. 1200–1207.

<sup>2</sup> Sukumar, R. *The Living Elephants Evolutionary Ecology, Behavior, and Conservation*, Oxford University Press, (2003)

<sup>3</sup> Berens, Michael J., "Elephants are dying out in America's zoos," *Seattle Times*, Dec. 1, 2012.

between 1962 and 2012, half of the elephants died by age 23 years, about one-third of the average lifespan of their non-captive counterparts.

3. In their natal subtropical habitat, Asian elephants routinely traverse a range of between 105 and 320 km<sup>2</sup> (26,000 and 79,000 acres),<sup>4</sup> often walking 20-30 miles per day.

4. Elephant feet, also referred to as hoofs, have a thick pad on the bottom that acts as a cushion. Elephant foot bones resemble the bones in human feet in that each toe (digit) is comprised of several smaller bones (phalanges). However, in elephant feet, the outermost bone resembles a semi-circle. With the pad carrying most of the weight, it appears the elephant walks on "tiptoes." Nails attached to the soft tissue help give the elephant traction as they walk. (Exhibit 1, Asian elephant foot structure, Credit: Reconstructed CT scan of elephant foot. Sophie Regnault. Attribution-NonCommercial 4.0 International (CC BY-NC 4.0))

5. Elephant feet, legs and joints evolved for extensive walking. Elephant footpads and nails grow constantly, and in the wild are kept clean and healthy through regular walking.<sup>5</sup>

6. Captive elephants kept on concrete or sand are more likely to have foot

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<sup>4</sup> Sukamar, R., Ecology of the Asian elephant in southern India. I. Movement and habitat utilization patterns, *Journal of Tropical Ecology*, 5:1, 1989.

<sup>5</sup> Schmidt, M., *Jumbo Ghosts, The Dangerous Life of Elephants in Zoos*, XLibris Corporation (2001).

problems.<sup>6</sup> If kept standing in moisture and excrement, particularly on hard substrate, captive elephants are predisposed to pododermatitis, also called canker or hoof rot. Other primary factors are lack of exercise and poor nutrition.<sup>7</sup>

7. Osteitis, or osteomyelitis, an infection of the bones, is caused by poor hoof management, and the above factors.<sup>8</sup> Often a sharp instrument or object carries the infection into the bone.<sup>9</sup> Left to fester, the infection dissolves the bone (lysis).

8. Living Conditions. Defendant Zoo's elephant exhibit is under 20,000 square feet of area accessible to Ruth and Emily.

9. The exterior yard is comprised of hard-packed sand/dirt and a 100,000-gallon concrete pool that divides the old exhibit area (12,000 s.f.) from the new area (8,000 s.f.). The pool is rarely used by the elephants and often contains duck waste and algae. The new outer area does not contain a separate potable water source for the elephants for cooling or drinking. When confined to the outer area, the only water available is from a drain pipe at the water feature. In the summer, keepers put out a fire hose and run it to provide water to cool and drink.

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<sup>6</sup> Haspeslagh, M., et al, "A survey of foot problems, stereotypic behaviour and floor types in Asian elephants (*Elephas maximus*) in European zoos," *Animal Welfare* 22:437-443 (2013), p. 441.

<sup>7</sup> Mikota, S. M., Fowler, M., *Biology, Medicine & Surgery of Elephants*, Ch. 20, Foot Disorders, Ch. 35, Veterinary problems of geographic concern, p. 443, 275.

<sup>8</sup> *Id.* p. 277.

<sup>9</sup> *Id.* p. 286.

10. There are two open air timber structures, one on each side of the pool. They do not provide protection from rain, sleet, or snow. The structure on the inner yard, a hut, now lacks a roof and so provides little or no shade.

11. The elephant exhibit is too small to allow elephants to roam or to engage in natural foraging behavior. There are four trees in the outer area but no branches left at a level for foraging.

12. Ruth and Emily spend at least 16 hours each day in the concrete barn while the zoo is closed. In the winter, that increases to 20 hours or more due to inclement weather. In severe weather, they are kept inside for 24 hours, sometimes for days at a time.

13. Until 2017, the barn had an open floor plan with a 1200 s.f. stall and an 800 s.f. stall separated by post and cable; a tool shed area, and a protected viewing area. Renovations to the interior in 2017 divided the two stalls into two smaller stalls of about 800 s.f. each, a central aisle and an "elephant restraining device" or ERD. All are surrounded by steel bars. (Exhibit 2, Floor plan from bid package; Prior open floor plan; Interior photos of barn dated March 1, 2019).

14. The elephants' stalls are 20' x 40' leaving little room for a 12' long elephant to avoid standing in their waste when confined while the Zoo is closed.

15. The barn's concrete floor was partially removed and replaced with a soil floor in 2012. It becomes compacted by the weight of two elephants standing and

walking on it. According to the zookeepers' Daily Logs received under MGL 66, Public Records Access Act, the floor is hosed down, but it is unclear whether this removes the elephants' waste entirely. Hosing may cause additional compaction creating a hard substrate.

16. When the steel bars and gates were installed, it made it particularly difficult for the front-end loader to enter Ruth's stall, turn, and remove soil.

17. Previously, the soil was removed from the stalls and placed outside until it was taken off-site. The last time this occurred was in March 2019.

18. Now, the soil is replaced very infrequently. Instead, the waste-contaminated soil is "rotated," moving it to piles on the interior yard and then back into the barn. (Exhibit 3, Sample Daily keeper log)

19. Between January 14 and June 18, 2021, the soil was not removed from the barn. On June 18 it was removed and placed in piles in the elephants' yard. It was not rotated again until two months later, according to the daily logs.

20. The accumulation of waste-contaminated soil caused a sandfly infestation for several months. (YouTube video <https://youtu.be/VCxyWw4yj84>, Ruth entering the barn. White specks flying around are biting sandflies.)

21. The elephant barn roof has leaked for over two years. A bid to repair it and several other roofs was rejected as too high in August 2021 (Exhibit 4, Bid Awards, City of New Bedford Purchasing Department website). The leak is

reported to be located over the concrete viewing area. The plans for the new roof indicated that there are other areas of the roof that leak. A recent bid for the elephant barn roof was awarded on November 15, 2021.

22. There are two other pipes that also drain water into Ruth's stall from an unknown source, as seen at the March 2019 visit. The roof plans do not call for their removal, despite Ruth's hoof condition.

23. Asian elephant Ruth. Ruth is a 60-year-old female who was captured ~1961. She first shows up in historic newspaper records at Benson's Wild Animal Park in Hudson, NH in 1963 with circus trainer Slivers Madison. According to Bret Bronson, former elephant handler at Benson's, her import papers indicated her birth year as 1960. This was corroborated by Angela Spiegel, a former employee of the East India Camel Co., Ruth's second owner.

24. When brought to the Defendant's Zoo in 1986, Ruth weighed just 5900 lbs. She was considered as being in "poor condition, malnourished." Although at times she weighed up to 7200 lbs., Ruth weighed ~6400 lbs. in December 2019. She weighed 5816 lbs. at the time the Complaint was filed.

25. For the past two years, Ruth has been restricted from moving, eating and drinking when on exhibit. In the linked video, Ruth is seen swaying in stereotypy, and then spots a bit of food on the ground. Rather than step forward, she strains to reach it as if an imaginary chain is on her back leg (Ruth reaching at 50 sec.,

<https://m.youtube.com/watch?v=Jl7oSwBl5uo>). It typifies the forced immobility the Defendant's Zoo has imposed on Ruth.

26. According to the zoo's records, Ruth and Emily receive only 80 - 100 lbs of hay daily and 30 lbs. of grain, supplements, and produce. Asian elephants eat up to 330 lbs. of grasses and grains per day.

27. But on the occasions when Ruth was ordered to stand in place, she was not fed nor could she graze. On other occasions, she was ordered to turn away from her food or move away from it. Zoo staff then claimed that Ruth "had access" to food and water but "preferred" not to eat or drink.

28. As Plaintiff brought this matter to the attention of the Defendant's zoo management time and again, she was met with standard replies that Ruth "preferred" to stand still, that "she has access to food and water," and that it wasn't possible to train Ruth to stand still. (Exhibit 5, email from Zoo Director Keith Lovett,<sup>10</sup> email to Zoo veterinarian Erica Lipanovich). However, Ruth's behavior was in stark contrast to the previous eight years that Plaintiff visited the zoo and observed Ruth and Emily moving freely around the (albeit small) exhibit. It appeared Ruth had been trained to turn away from food, even as she was

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<sup>10</sup> If Mr. Lovett's reasoning is accurate, and Ruth's behavior is not the result of positive training that allows elephants the choice of whether to participate or not, Ruth's immobility is the result of negative or adverse training. Such training methods would include food and water deprivation and physical force (beatings). But however it was accomplished, her immobility clearly isn't her choice.

eating. (Video taken July 27, 2020 at <https://youtu.be/3moOgdQFEZE>).

29. Although Ruth has had foot abscesses, and joint arthritis in the past as a result of zoo living conditions,<sup>11</sup> she has not had canker (hoof rot) and septic osteitis in her feet prior to January 2021. Further, the Defendant actively treated her joint arthritis with laser therapy and her hooves with proper management.

30. At her 2021 annual health assessment, the records show that Ruth's nail had no defects. But January 27, 2021 records show new nail defects caused by hoofwork by a keeper. (Exhibit 6, Clinical records dated January 27, 2021) The Defendant then failed to perform even the minimal rotation of the barn dirt floor until June 18, 2021, although Ruth was receiving treatment for the canker.

31. Between January 27 and April 27, the Defendant did little to heal Ruth's hoof. Notes indicate that it was trimmed by keepers, soaked but no radiographs, cultures, or biopsies were performed. By April, the canker, also referred to as a lesion, had grown and was causing Ruth pain. According to the Zoo's clinical records during April, several consulting veterinarians recommended against trimming the canker for at least a month because it may cause osteitis (Exhibit 7, Clinical records for Ruth, dated April 27, 2021). The clinical records also note that "Trimming stimulates growth of the [proliferative] tissue."

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<sup>11</sup> Both elephants have been given glycoflex for joint health. Ruth receives ibuprofen as well since 2015. Both elephants have had occasional laser therapy for arthritis in their leg joints.

32. May 9 and May 11 clinical notes show that additional consultants recommended against trimming. (Exhibit 8, Clinical notes dated May 9 and May 11, 2021). Yet the Defendant trimmed the canker six times between June and July, although she noted there was still a risk of osteitis. In that time, Ruth's nail bed blew out (Exhibit 9. Photos dated June 12 and July 12, 2021).

33. Defendant continued to trim the canker another 15 times over the next three months, sometimes "aggressively."

34. On May 7, four months after the canker started, the Defendant took a culture, which indicated Ruth's foot was infected by at least one agent. The result was ignored, although the canker was malodorous. A month later, on June 4, a second culture was taken indicating the presence of three strains of bacteria. The clinical notes on June 10 indicate these were disregarded as "contaminants." On June 24, 2021, Ruth's right front foot also had proliferative pododermatitis. Still the Defendant denied it was from an infection (Exhibit 10, Clinical records dated June 4, June 10 and June 24, 2021).

35. When a third culture taken at the end of July indicated three strains of bacteria known to cause osteitis, the Defendant finally acknowledged Ruth's foot was infected, but continued trimming, knowing there was a risk of osteitis. (Exhibit 11, Clinical notes dated July 29, 2021)

36. Between April 27 and August 6, 2021, the Defendant's veterinarian took

three sets of radiographs and three times claimed no osteomyelitis (osteitis) was present. (See Exhibit 6, April 27 clinical records and Exhibit 10, Clinical records dated June 4, 2021).

37. But by June 4, Ruth's outermost toe bone was already gone. (Exhibit 12, Brookfield report, dated August 6, 2021, refers to P3 [toe bone] gone "two months ago.")

38. On August 6, when additional radiographs were taken, the Defendant's veterinarian<sup>12</sup> for the third time claimed no osteomyelitis was present. (Exhibit 13, August 6, 2021 clinical records.) By this time, the infection had taken another toe bone on that digit, according to the report by DACVR Eric T. Hostnik of Brookfield Zoo.

39. The Defendant continued trimming, even after receiving the DACVR's report finding septic osteitis, with surgical debridement as a possible cause, in late August.

40. In fact, the Defendant's veterinarian ordered "stall rest" beginning in August, unheard of for osteitis and canker. Ruth was forced to stay in the same fetid conditions that caused the infection that trimming forced into her toe bones. She developed cellulitis, an infection of the connective tissue. Ruth has not

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<sup>12</sup> Defendant's veterinarian is not a Diplomate of the American College of Veterinary Radiology (DACVR).

presented with cellulitis in records dating back to 2005.

41. Radiographs taken August 27, 2021 clearly show two toe bones are missing (Exhibit 14 Radiograph, Ruth's left front foot, August 27, 2021). The Defendant issued a press release claiming it was "age-related." (Exhibit 15, Email dated September 22, 2021)

42. Since then, additional radiographs were taken September 23 and October 28, 2021 and November 16. It is unclear whether the osteitis has slowed. (Exhibit 16, Brookfield report dated October 28, 2021 received November 2, 2021<sup>13</sup>). However, the Defendant stopped administering antibiotics to Ruth on November 2, 2021.<sup>14</sup>

43. What is clear is that Ruth's infection in her front left foot had spread not only to her right foot in July, but to Emily's right foot, too.

44. Emily. Asian elephant Emily is approximately 57 years old, and was purchased by the Defendant in 1968 at age 4 years. She is larger than Ruth by about 1500 lbs. Currently she weighs 7755 lbs. Her maximum weight was 8707 lbs. in 2019.

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<sup>13</sup> The first annotated radiograph identifies two structures as Digit 2 and a lytic distal P1. However, both the August Brookfield report, which uses the August 6 radiographs and the August 27 radiographs indicate that P2 and P3 are already gone.

<sup>14</sup> The November 18 Brookfield report indicates the beginning of resorption of interphalangeal joint D2-D3, which might indicate an active bacterial infection.. However, that report is under review.

45. Emily has been on a reduced diet for six years. However, she has been allowed to walk around the small half-acre exhibit, and to drink and cool as needed. Although her diet and exercise is still subpar for what adult elephants require, she has not been restrained from moving for hours at a time nor prevented from eating.

46. In July 2021, Emily was first diagnosed with pododermatitis. (Exhibit 17, Clinical records dated July 16, 2021). No trimming or cryotherapy was performed although Emily had a nail canker and was visibly in pain. In this video taken on July 15, 2021, she is seen holding her right front foot up. (<https://m.youtube.com/watch?v=zAOJyWZot3U>).

47. Beginning in August 2021, Emily was separated from Ruth during the day by a metal gate between the outer yard and the area near the barn. No records were available to Plaintiff for the period August 28 to September 15, 2021. (Exhibit 18, Clinical records August 28-September 9, and September 9 to September 25, 2021).

48. Yet Emily was seen holding her right front foot up in pain through to September (Video taken September 9, 2021 <https://youtu.be/22cTYh1xHqY>). As recently as October 2-5, Emily was holding up first her left rear foot and then her right rear foot.

49. Emily's hoof radiographs from June 2021 were provided to Plaintiff on

October 27, 2021, and indicate a proliferative pododermatitis on her right front hoof, digit 4. Recent clinical records indicate her proliferative pododermatitis is being treated and only occasionally trimmed. She is not receiving cryotherapy or antibiotics (Exhibit 19, Clinical records for Emily from September 15, 2021 to November 29, 2021) Based on Plaintiff's daily observations, Emily's movement is not restricted (other than by the closed gate), she is not ordered to stand still for hours at a time, and she is allowed to eat, graze and drink at will.

50. The Defendant City has attempted to attribute Ruth's pododermatitis and subsequent osteitis to her hoof conformation (pigeon-toed stance). If the etiology of the pododermatitis was not due to the presence of moist unsanitary conditions on hard-packed substrate in the barn, Emily would not have presented with it—she is able to exercise, eat her full allotment of food, drink at will, and is not pigeon-toed.

51. If Emily's pododermatitis runs a course similar to Ruth's, it will not resolve for 12-18 months (See Exhibit 10, Clinical notes for Ruth.)

#### **IV. LEGAL FRAMEWORK**

52. An "endangered species" identified by the ESA is "any species in danger of extinction." 16 USC § 1531(b). Section 9 of the ESA prohibits the "taking" of any endangered species and also makes it illegal to "possess" any endangered species that has been unlawfully "taken." Id. § 1538(a)(1)(B) and (a)(1)(D).

53. The term "take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct." Id. § 1532 (19). The term "harm" includes any act that "kills or injures" an endangered animal. 50 CFR § 17.3.

Harass in the definition of "take" in the Act means "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. This definition, when applied to captive wildlife, does not include generally accepted:

(1) Animal husbandry practices that meet or exceed the minimum standards for facilities and care under the Animal Welfare Act,

(2) Breeding procedures, or

(3) Provisions of veterinary care for confining, tranquilizing, or anesthetizing, when such practices, procedures, or provisions are not likely to result in injury to the wildlife."

54. The harassment exception that the zoo industry uses is debatable in its application to Ruth and Emily (See, Rowley's Petition for a Writ of Certiorari, USCt C/N 20-1802, Denied, 10/4/21).

55. There is no exception to the harm "take." Both elephants have been injured by the Defendant's actions and inactions.

56. The Defendant cannot use the ESA harassment exception because the circumstances of the herein claims are not generally accepted animal husbandry practices. See *Hill v. Coggins*, 867 F.3d 499 (2017) at 504: " the Zoo's virtually barren concrete pit enclosures, public feeding arrangements, and apparent lack of meaningful enrichment programs fell short of generally accepted animal husbandry practices..." See also: *Kuehl v. Sellner*, 161 F.Supp.3d 678 (2016), "...Moreover, Defendants have not provided adequate sanitation in compliance with generally accepted animal husbandry practices," and *PETA v. Tri-State Zoological Park of Western Maryland, et al*, 397 F.Supp.3d 768 (2019) citing Captive-bred Wildlife Regulation, 63 Fed. Reg. 48,634-02, 48,638 (Sept. 11, 1998) noting that the exception was intended to exclude "normal husbandry practices that are not likely to result in injury."(Emphasis added.)

57. The Animal Welfare Act (AWA) is administered by the U.S. Department of Agriculture Animal Plant Health Inspection Services (USDA APHIS) Animal Care division. That agency has twice inspected the Defendant zoo in the past year and found no noncompliant issues (See: <https://efoia-pal.usda.gov/App/PalLogin.aspx>, July 21 and October 27, 2021.)

58. USDA APHIS' failure to enforce the AWA has received national scrutiny for allowing the Connecticut-based Commerford Zoo to transport an extremely ill Asian elephant to the Big E Fair in Springfield, MA to give rides in 2019. The

elephant died in the Big E parking lot three days later. (See:

<https://api.nationalgeographic.com/distribution/public/amp/animals/article/usda-accused-of-ignoring-animal-welfare-for-business-interests?>, National Geographic, October 13, 2021).

59. Additionally, the animal welfare organizations People for the Ethical Treatment of Animals (PETA), the Humane Society of the United States and others have supported federal legislation to force USDA APHIS to enforce the AWA.<sup>15</sup> As proposed, that legislation would not apply to Association of Zoos & Aquarium (AZA) accredited zoos.

60. Defendant's Buttonwood Park Zoo was first accredited by AZA in 2003. Since then it has never been cited by the AZA for violations of the AWA or AZA guidelines, even when the zoo was cited and fined by USDA APHIS for a direct violation of the AWA in 2014.<sup>16</sup> An AZA audit team found no violations at the time, nor was the Defendant zoo's accreditation revoked, despite Ruth's hypothermia, frostbite, loss of parts of her ears and 10" of her tail from exposure to freezing temperatures when she was found outside the barn during a blizzard.

61. Provision of a sanitary shelter for Ruth and Emily is required under Part 3,

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<sup>15</sup> H.R. 3277, Animal Welfare Enforcement Improvement Act, 2021.

<sup>16</sup> See related case 17-cv-11809, AWA violation for failure to shelter Asian elephant Ruth in extreme cold, harm resulting.

Subpart F, § 3.1.25(d), § 3.126(d), and § 3.131 of the AWA.

62. The conditions that led to Ruth's and Emily's pododermatitis are not generally accepted animal husbandry practices.

#### **V. CLAIMS**

63. Claim I. Defendant City has taken Ruth and Emily in violation of Section 9 of the ESA: Unsanitary barn; failure to repair roof, forced confinement.

64. Ruth's long list of injuries—loss of use of her trunk, loss of half her tail, loss of half her right ear, now includes loss of at least two toe bones. Emily may be losing toe bones, or worse if her pad is infected.

65. This current harm was entirely preventable, and was caused by the Defendant's actions and inactions. By not repairing the barn roof for over two years, not removing water sources in Ruth's stall, failing to remove the barn flooring for six months; failing to take waste-contaminated soil off site; failing to recognize Ruth's weight loss for two years despite a visibly worsening body condition, and failing to let Ruth exercise, the Defendant City created perfect conditions for hoof rot. The Defendant then ignored recommendations from nine consulting veterinarians and experienced zoo staff at other zoos; ignored two sets of cultures and biopsies for three months, and misread radiographs for four months, all of which caused bacteria to proliferate and infect Ruth's left front foot toe bones, for osteitis to spread, for Ruth's right front foot to become infected, and

for the bacterial infection to spread to Emily's right front foot.

66. Plaintiff asserts that these acts were part of an overall plan by the Defendant to intentionally cause Ruth harm—injury and death, although finding of a 'take' does not require intent.

67. As a result of Defendant's actions, Emily also developed pododermatitis and suffered harm.

68. Claim II. Take caused by Defendant City harms and harasses Ruth and Emily in violation of 9 of the ESA: Inadequate shelter in inclement weather, lack of exercise, food deprivation.

69. The City Zoo harms and harasses Ruth by confining her in a facility that exposes her to extreme heat and extreme cold without shelter and significantly disrupts her normal behavioral patterns, including sheltering and feeding.

70. Ruth was routinely forced to stand still for up to four hours under the roofless hut, and also at the barn door, in extremely hot weather, including during heat advisories, and extremely cold weather. During those times, she was prohibited from moving. This forced lack of exercise caused or exacerbated her arthritis in her joints, and significantly contributed to her pododermatitis and osteitis.

71. Further, Ruth was deprived of food, water and the ability to cool during that time, which caused her to lose 15% of her body weight. The resulting poor

nutrition and poor body condition also significantly contributed to her pododermatitis and osteitis.

72. When Ruth was allowed to move, she immediately went to water to drink and spray on herself to cool, and to dust. She then looked for food.

73. On several occasions in August 2020, Ruth was kept inside the barn during 100°F temperatures for hours with the barn doors closed. She was not allowed access to water to cool. When she was released, she immediately sought water to cool. The barn is not air conditioned.

74. This intentional refusal to provide adequate nutrition and exercise resulted in a 532 lb. weight loss in the past two years, and a poor body condition. This radical weight loss was not identified as problematic until October 2021. This neglect significantly contributed to the pododermatitis and osteitis.

75. Emily was confined to the outer yard, an 8,000 s.f. area, for eight hours each day during the same periods of Ruth's confinement. This lack of exercise and exposure to extreme temperatures caused or exacerbated her arthritis and contributed to her hoof rot on her right foot. Emily's reduced diet led to a 10% weight loss and rapid decline in her body condition that also contributed to her pododermatitis, an ongoing condition.

## **VI. PRAYER FOR RELIEF**

### **Jury Trial Demand**

76. Plaintiff Rowley demands a jury trial pursuant to Rule 48 for all triable issues.

### **Declaratory and Injunctive Relief**

77. Plaintiff Rowley is entitled to Declaratory and Injunctive relief. Plaintiff suffers and continues to suffer actual injuries from knowing that Ruth and Emily are harmed by Defendant's negligence and mistreatment. Rowley is harmed emotionally, spiritually, and aesthetically. This harm is irreparable because it cannot be measured.

78. Legal remedies which do not remove Ruth and Emily from the Zoo are illusory. Merely declaring that the Defendant's treatment of Ruth and Emily violates Section 9 of the ESA does not by itself remedy Plaintiff's injuries.

79. There is a substantial likelihood that Plaintiff will succeed on the merits of this case. The Defendant's mistreatment of Ruth and Emily glaringly violates Section 9 of the ESA and so is prohibited.

80. The Defendant will not be harmed by removal of the elephants. Zoogoers are buying tickets to see elephants whose living condition is so filthy their foot bones are infected. That does not serve *any* public interest. The elephants' suffering outweighs the Defendant's self-interest in keeping them.

81. All conditions precedent to Plaintiff's claims for relief have been performed or occurred prior to filing this complaint.

82. Plaintiff demands a jury trial of any triable issues pursuant to Rule 38 of the Federal Rules of Civil Procedure.

83. The conditions under which the Defendant holds Ruth and Emily as described above "takes" them in violation of Section 9 of the ESA, 16 USC § 1538(a)(1)(D). These unlawful activities injure Plaintiff.

84. THEREFORE, Plaintiff requests that this Court enter a judgement:

- a) Declaring that the Defendant City's treatment of Ruth and Emily violates Section 9 of the Endangered Species Act;
- b) Enjoining the Defendant from euthanizing either elephant so that they may be removed to an appropriate facility;
- c) Enjoining the Defendant from continuing to violate the Endangered Species Act;
- d) Enjoining the Defendant from continuing to possess Ruth and Emily;
- e) Enjoining the Defendant from transferring Ruth and Emily to the Buttonwood Park Zoological Society, or another public or private zoo;
- f) Allowing Plaintiff's veterinarian(s) to inspect Ruth and Emily in the barn;
- g) Transferring Ruth and Emily to Plaintiff for transport to a sanctuary with appropriate elephant facilities and staffing;

- h) Awarding transport costs to Plaintiff;
- i) Allowing Plaintiff to attend the necropsy and awarding Plaintiff either elephant's remains should either die at the zoo;
- j) Granting Plaintiff any other such relief as may be equitable.

Respectfully submitted,  
/s/Joyce Rowley  
Plaintiff, pro se  
PO Box 50251  
New Bedford, MA 02745  
(508)542-8297

## **EXHIBIT F**

EXHIBIT F

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

JOYCE ROWLEY	:	Case No.: 21-cv-11649-FDS
	:	
	:	
Plaintiff,	:	
	:	
v.	:	
	:	
CITY OF NEW BEDFORD,	:	
MASSACHUSETTS	:	
	:	
Defendant.	:	
	:	
	:	
	:	
	:	

**AFFIDAVIT OF ERICA LIPANOVICH, DVM**

1. I am a licensed, practicing veterinarian of the Commonwealth of Massachusetts that is in good standing with the board of registration in veterinary medicine. (8496-VT-VT)
2. I graduated with my doctorate of veterinary medicine (DVM) in 2004 from Mississippi State University College of Veterinary Medicine. See attached resume.
3. I have actively been practicing veterinary medicine since 2004. For approximately twelve years of my professional career, I have been in full time zoological medicine.
4. I was hired by the City of New Bedford in March 2019 and assumed the medical care of Asian elephant, Ruth, and Asian elephant, Emily, at that time.
5. In my role as veterinarian, and, in the time since I have assumed their care, I have treated Ruth for the following medical complaints: broken tush, microabscesses to the tail, abrasions to the actively healing right ear margin, cheek bones, hips, and tail, two external ear canal infections, mild colic, one temporal gland infection, and proliferative pododermatitis to both front feet. See attached summary for Ruth.
6. In my role as veterinarian, and, in the time since I have assumed their care, I have treated Emily for the following medical complaints: broken tush, abrasions to the cheek bones and hips, one external ear canal infection, and proliferative pododermatitis to right front foot. See attached summary for Emily.

7. Over the course of treating both of the elephants for a variety of ailments, I have consulted with many different experienced zoological veterinarians and elephant experts from various institutions, including: Kirk Suedmeyer, Ellen Weidner, Lydia Young, Susan Mikota, James Oosterhuis, Dennis Schmitt, Carlos Sanchez, Jennifer D'Agostino, Kay Backues, and Betsy Stringer.
8. I have reviewed the allegations put forth by Ms. Rowley, who is not qualified to interpret medical records, radiographs or blood values, the following statements in her First Amended Complaint. The following are false and/or inaccurate:

**Claim: "there have been substantial changes to the elephant exhibit and management to the detriment of both elephants."**

- Disagree - there have been no significant changes to the exhibit
- The only change in animal management has been the prescribed free contact in order to better address Ruth's feet.

**Claim: "Notably, the facilities housing them became dilapidated, management of the facilities and elephants changed and, as a result, both elephants now present with pododermatitis- a painful foot disease."**

- Disagree - the facilities housing them are not dilapidated and did not cause pododermatitis in both elephants.
- Multiple consultants agreed that the predisposing factor in Ruth's case is bio-mechanical in nature due to severe conformation deviations.

**Claim: "In Ruth's case, her left front foot became infected and due, to the Defendant's actions, progressed to sepsis osteitis." Two of her toe bones in her left foot dissolved. "**

- Disagree - there was no negligence, and the animal was never diagnosed with septic osteitis. This was a possible differential that was given in the 8/20/2021 radiology report from Brookfield and additional reports stated that active osteomyelitis was less likely given that osseous changes are similar in all the studies. There is no question that there have been changes to the surface of the bones with some resorption, however they have not "dissolved".

**Claim: "Since the Defendant failed to acknowledge Ruth's foot was infected for over four months, the infection spread to her right foot."**

- Disagree - Patient was already under treatment for the one foot, which is an acknowledgement. In June 2021 it was noted that Ruth's right front foot also had pododermatitis- this was due to a bio-mechanical issue, not infection. It was anticipated based on her weight distribution to compensate for the left front foot, and the foot consultant and staff were pro-actively monitoring and treating with corrective trimming to keep the area as quiescent as possible. Ms. Rowley does not seem to understand the difference between inflammation and infection.

**Claim: "The infection then spread to Emily's front right foot."**

- Disagree - Proliferative pododermatitis is not a contagious disease but a chronic hypertrophic disease. Emily's feet were examined by a foot care specialist in May 2021, radiographs were taken in June 2021. She was assessed again in July 2021; August 2021 and more radiographs were taken. She was also examined by an elephant veterinarian in August 2021. Additional radiographs were taken in September, and she was assessed by a foot care specialist in September, October and November. The defect in her right front foot is stable/healing and, while there is and has been inflammation, there has never been an infection.

**Factual Background**

**6. Captive elephants kept on concrete or sand are more likely to have foot problems. If kept standing in moisture and excrement, particularly on hard substrate, captive elephants are predisposed to pododermatitis, also called canker or hoof rot. Other primary factors are lack of exercise and poor nutrition.**

Ms. Rowley is citing S.M Mikota and M Fowler from the Biology, Medicine & Surgery of Elephants chapter 20. However what Ms. Rowley neglects to include in this citing is where it is noted that

"Elephants with conformational faults tend to develop foot problems as they begin to age (30-40 years) because they walk in such a manner that unequal weight is distributed to unaffected limbs."

**9. "When confined to the outer area, the only water available is from a drain-pipe at the water feature."**

- Disagree - There is an opportunity for both elephants to access fresh potable water on both sides of the habitat. The drain-pipe Ms. Rowley is referencing is a freshwater feed carrying city water which is treated, tested and acceptable for human consumption.

**12. "Ruth and Emily spend at least 16 hours each day in the concrete barn while the zoo is closed. In the winter, that increases to 20 hours or more due to inclement weather. In severe weather, they are kept inside for 24 hours, sometimes days at a time."**

- Disagree - The elephants have access to one or both outside yards when the Zoo is closed, weather permitting on an alternating schedule. The city agrees that during inclement weather and on days when the temperatures are below freezing, the elephants are inside.

**15. "The barn's concrete floor was partially removed and replaced with a soil floor in 2012. It becomes compacted by the weight of two elephants standing and walking on it." According to zookeeper's Daily Logs received under MGL 66, Public Records Access Act, the floor is hosed down, but it is unclear whether this removes the elephants' waste entirely. Hosing may cause additional compaction creating a hard substrate. "**

- Disagree - The floor of the barn is not soil- it is sand. The barn floor does not become compacted, and it is not a hard surface. Waste contaminated sand is removed daily. The sand is hosed to prevent excess dust and to activate the disinfectant used to promote absorption into the substrate.

**16. "When the steel bars and gates were installed, it made it particularly difficult for the front-end loader to enter Ruth's stall, turn and remove soil."**

- Disagree - there is no truth to this statement

**17. Previously, the soil was removed from the stalls and placed outside until it was taken off-site. The last time this occurred was March 2019.**

- Disagree - there has been major re-grading and rotation of both sand and loam after March 2019 In addition, daily sand re-grading and rotation is performed inside the stalls

Major rotation occurred 5/7/2019

Major rotation 6/25/2019

Major sand rotation 7/31/2019

Fresh Loam added to yard 10/28/2019

Major sand rotation 1/9/2020

Major sand rotation 5/28/2020

Fresh Loam added to yard 5/28/2020

Major sand rotation 9/4/2020

Major sand rotation 12/9/2020

Major sand rotation 1/14/2021

Fresh Loam added 6/14/2021

Major sand rotation 6/18/2021

Major Sand rotation 7/24/2021

Major sand rotation 8/27/2021

Fresh Loam added 9/9/2021

**18. Now, the soil is "rotated" moving it to piles on the interior yard and then back into the barn.  
(Exhibit 3. Sample Daily keeper log)**

- Disagree - Ms. Rowley is not qualified to interpret the daily keeper logs and is in fact misinterpreting the notation. Keepers rotate the sand inside the barn after waste and contaminated sand has been removed to ensure that the sand does not become compacted. They "fluff" the sand pile beds as well. They will bring in fresh sand that is piled outside of the yard as needed. Contaminated sand, discarded hay, and excrement is removed to the dumpster- it is never dumped in the yard except during a major. rotation coordinated with DPI to ensure that the used sand is removed from the site.

**19. Between January 14 and June 18, 2021, the soil was not removed from the barn. On June 18 it was removed and placed in piles in the elephants' yard. It was not rotated again until two months later, according to the daily logs.**

- Disagree - Contaminated sand is removed from the barn daily and larger-scale rotation is done a few times per year or more often if needed.

**20. The accumulation of waste contaminated soil caused a sandfly infestation for several months.**

- Disagree - There was no waste contaminated soil in the video Ms. Rowley is referencing and there is absolutely no way she can determine that anything in the video is a "biting sandfly"

**21. The elephant barn roof has leaked for over two years. A bid to repair it and several other roofs was rejected as too high in August 2021 (Exhibit 4, Bid Awards, City of New Bedford Purchasing Department website) The leak is reported to be over the concrete viewing area. The plans for the new roof indicated that there are other areas of the roof that leak. A recent bid for the elephant barn roof was awarded on November 15, 2021**

- Disagree - At the present time, there is a seam where the small addition on the building meets the existing barn that leaks during heavy rain events creating a puddle in the keeper workspace. This has been addressed by the Department of Facilities and Fleet Management for both the short and long term. It has also been inspected by USDA during the heaviest rain event of the season.

**22. There are two other pipes that also drain water into Ruth's stall from an unknown source, as seen at the March 2019 visit. The roof plans do not call for their removal, despite Ruth's hoof condition.**

- Disagree- There are not two pipes draining water into Ruth's stall.

**23. Asian elephant Ruth Ruth is a 60- year-old female who was captured in 1961. She first shows up in historic newspaper records at Benson's Wild Animal Park in Hudson, NH in 1963 with circus trainer Silvers Madison. According to Bret Bronson, former elephant handler at Benson's, her import papers indicated her birth year as 1960. This was corroborated by Angela Spiegel a former employee of the East India Camel Co., Ruth's second owner**

- Disagree -Bret Bronson did not indicate that Ruth's "import papers indicated her birth year as 1960". He has stated that she arrived at Benson's in 1960 and was anywhere from 2-4 years old which puts her birth date at approx. 1958 and is consistent with her arrival report to the Buttonwood Park Zoo.

**24. When brought to the Defendant's Zoo in 1986, Ruth weighed just 5,900lbs. She was considered as being in "poor condition, malnourished". Although at times she weighed up to 7200lbs., Ruth weighed 6400lbs in December of 2019. She weighed 5816lbs at the time the Complaint was filed.**

- City agrees that Ruth has lost weight. She is now 6080 lbs and on an upward trend. The weight loss was consistent and in due to long-term antibiotic therapy. 6400-6800 is the optimum weight range for this animal and now that antibiotics have been discontinued, it is anticipated she will continue to gain weight.

**25. For the past two years, Ruth has been restricted from moving, eating, and drinking while on exhibit.**

- Disagree - This is not true. Ms. Rowley has accused Zoo staff and Volunteers of using mind control, hand signals and verbal commands to force Ruth to stand immobile for hours. Director

Lovett, Dr. Erica Lipanovich, and I have had in person conversations and written correspondence with Ms. Rowley attempting to explain that what she is alleging is not the case and not possible.

**26. According to the Zoo's records, Ruth and Emily receive only 80-100lbs of grain, supplements and produce. Asian elephants eat up to 330lbs. of grasses and grains per day.**

- The elephants also receive fresh browse, have opportunities to graze, receive additional food items during training and for enrichment. Diets are reviewed annually and adjusted throughout the year as needed and are calorically balanced for each individual elephant.

**27. But on occasions when Ruth was ordered to stand in place, she was not fed, nor could she graze. On other occasions, she was ordered to turn away from her food or move away from it.**

- Disagree - Depriving Ruth of food or water or access to it goes against our elephant management policy, animal management policy, and animal welfare philosophy. Our management system is protected or restricted contact and utilizes the principals of operant conditioning with positive reinforcement. There are no verbal or visual cues that would hold or force an elephant to remain still for hours at a time.

**30 "But January 27, 2021, show new nail defects caused by hoof work by a keeper. The Defendant then failed to perform even the minimal rotation of the barn dirt floor until June 18, 2021, although Ruth was receiving treatment for canker"**

- Disagree - the defects in the nail were uncovered by a keeper performing routine foot work on the elephant. They were evaluated by the veterinarian and the elephant was receiving treatment (foot soaks), and the areas identified were responding to treatment.
- The elephant barn floor is sand, not dirt. Contaminated sand is removed from the barn daily and the sand is rotated within the barn as keepers' re-grade and move the sand around daily, so there was, in fact, more than minimal rotation of the sand.

**31. Between January 27 and April 27, the Defendant did little to heal Ruth's hoof. Notes indicate that it was trimmed by keepers, soaked, but no radiographs, cultures or biopsies were performed.**

- Disagree - The animal was under the care of a veterinarian who was examining the animal daily and consulted with both elephant and veterinary experts to develop a treatment plan. The animal was receiving medicated foot soaks, topical treatments and topical antibiotics, oral antibiotics, and cryotherapy.

**32. May 9 and May 11 clinical notes show that additional consultants recommended against trimming. (Exhibit 8, Clinical notes dated May 9 and May 11, 2021). Yet the Defendant trimmed the canker six times between June and July, although she noted there was still a risk of osteitis. In that time Ruth's nail bed blew out (Exhibit 9. Photos dated June 12 and July 12, 2021).**

Disagree- From the May 9<sup>th</sup> clinical notes *"no trimming with a knife unless absolutely necessary, use cryotherapy and/or medical maggot therapy"*

From the May 11<sup>th</sup> clinical notes **Front Left (D2):** *There should not be any more trimming done to the lesion or the immediate area for at least 2 weeks. The remaining small piece of nail in the center should be left to loosen on its own as more tissue fails. The large piece of nail that is still intact posterior to the lesion was long on the bottom, putting it in contact with the substrates in a way that was causing the affected tissue to shift/move with each step. We shaped the remaining bottom edge of the nail to shorten it and bevel it up into the nail face to try to reduce some of that movement to allow the affected tissue to "rest". The associated pad in that same area was shortened and blended back into the center of the pad.*

Two weeks would be May 25<sup>th</sup> - there was no trimming performed during that time period.

Between June 1, and July of 2021:

- June 1, 2021- piece of tissue came loose after cryotherapy and was removed
- June 4, 2021- biopsy taken for histopathology
- June 19, 2021, trimming, filing and shaping was done in consultation and conjunction with the elephant foot specialist
- July 12, 2021, there was a large section of necrotic tissue that was sloughing off - Trimmed about 4 by 8 cm section of tissue and 2 cm in depth. No bleeding.
- July 16, 2021, approximately 6 by 8 cm section of proliferative, necrotic tissue was removed in consultation and conjunction with the elephant foot specialist
- July 18, 2021, Small amount of proliferative tissue was removed along the ventral edges (about 1 cm in height and covering about 6 cm of the lesion).
- July 22, 2021, the left front D2 lesion had some trimming done to about 30% of it. The ventral medial necrotic section of tissue under the nail that is separate from the main lesion was trimmed
- July 27, 2021, Biopsy taken
- July 29, 2021, removed approximately 2 cm of the crabmeat tissue where applicable along the middle area and scraped several millimeters of grey necrotic tissue off the top. Removed the loose skin adjacent to digit 3 with no response. Noted there was a concomital section of dry, flaky almost, crabmeat-like section underneath this. Removed about a 2 cm triangular shaped area of tissue and about 1 cm deep. The necrotic tissue under the nail and along the slipper margin was trimmed. Mild amount of bleeding in a few places. No tissue hanging down any longer.

During the above timeframe there was "trimming" that consisted of removal of pad and nail which is part of routine foot husbandry and has been done in consultation with the foot specialist. There is also trimming or debridement of necrotic tissue that is done to provide a clear surface for cryotherapy.

**33. Defendant continued to trim the canker another 15 times over the next three months, sometimes "aggressively"**

City agrees as it was medically warranted, and part of the on-going treatment plan developed in consultation with the experts.

**34. On May 7, four months after the canker started, the Defendant took a culture, which indicated Ruth's foot was infected by at least one agent. The result was ignored, although the canker was malodorous. A month later on June 4 a second culture was taken indicating the presence of three strains of bacteria. The clinical notes on June 10 indicate these were disregarded as "contaminants" On June 24, 2021, Ruth's right foot also had proliferative pododermatitis.**

Disagree- The animal was receiving appropriate care and treatment before and up to May 7th for an on-going and developing medical condition. The animal was on medicated foot soakings of dilute chlorhexidine solution, antibiotic therapy prior to the culture & sensitivity (C & S) and on an antibiotic that the organism was sensitive to for treatment.

- Animal was started on a broad-spectrum antibiotic on February 15
- Animal was started on an additional antibiotic on April 30<sup>th</sup>
- C & S taken on May 7<sup>th</sup> showed growth of Citrobacter which is sensitive to the antibiotic prescribed to Ruth on April 30<sup>th</sup>.
- Biopsy submitted on May 13<sup>th</sup> - results showed no fungal growth or bacterial organisms detected in the examined sections.
- June 4<sup>th</sup> another C & S was taken that showed no anaerobic bacteria (these are bacteria that do not live or grow when oxygen is present and are the type of bacteria you would find associated with infections) and growth of aerobic bacteria (Pantoea, Citrobacter and Enterococcus) which are common occurring organisms in the environment and sensitive to the antibiotics that the animal was being treated with.

**Still the Defendant denied it was from infection (Exhibit 10, Clinical records dated June 4, June 10, and June 24, 2021).**

- Agree - there was no infection at that time. Can not definitively say this is active infection as these are opportunistic pathogens found in the environment. There was confirmation of inflammation.

**35. When a third culture taken at the end of July indicated strains of bacteria known to cause osteitis, the Defendant finally acknowledged Ruth's foot was infected, but continued trimming, knowing there was a risk of osteitis. (Exhibit 11, Clinical notes dated July 29, 2021)**

Disagree that there was no diagnosis of an infection and trimming/debridement was an appropriate part of the on-going treatment plan.

- Biopsy submitted on July 27<sup>th</sup> showed that no fungal elements are present in the examined sections. And low numbers of mixed morphology bacteria are present along the ulcerated surface.
- C & S submitted on July 29<sup>th</sup> - again anaerobic bacteria grown, aerobic bacteria grown was Klebsiella pneumoniae, Aeromonas, Citrobacter. Again, common surface organisms and 2/3 are sensitive to the drugs the elephant is on. Klebsiella can cause infection, however Ruth's bloodwork taken at the same time as the culture indicated there were no signs of infection.
- Bloodwork submitted on July 29<sup>th</sup> to University of Miami for acute phase proteins and fibrinogen showed that the total protein and A/G ratio are normal for this species. No globulinopathies are present. This EPH does not support the presence of inflammation or infection.

**37. But by June 4, Ruth's outermost toe bone was already gone. (Exhibit 12, Brookfield report dated August 6, 2021, refers to P3 (toe bone) gone "two months ago")**

Disagree -Ms. Rowley is referring to the history provided by the Veterinarian who believed based on radiographs that the P3 toe bone was missing. (This is exactly why radiographs have been taken repeatedly over the last 11 months. Ms. Rowley is also attempting to draw conclusions from radiographic reports, which she is not qualified to interpret. She is referencing bone loss, which was determined to be from radiographic technique, not infection. The inflammatory tissue was so dense, it was blocking the bones from view. In the August report the Radiologist gave their impressions based on the radiographs submitted:

2. Indistinct P3 of Digit A can be either due to inflammatory erosive osteitis or septic osteitis (or distal interphalangeal septic arthritis). Alternatively, depending on the extent of the proliferative dermatitis, the P3 may have been lost due to a large cutaneous defect or surgical debridement.
3. Digit A distal P2 articular erosion; consider inflammatory erosive osteitis, septic distal interphalangeal erosive arthropathy, or septic osteitis.

- In October, the radiologist gave the following impression:

There is greater detail and resolution of the anatomy in the current study; this is likely related to the decreased swelling of the soft tissue and the collimation of the radiographs. The greater detail resolution makes osseous changes more apparent and easier to identify.

Loss of bone of the P3, P2, and distal P1 of D2 - portions of the lysis involve the articular surfaces of the distal interphalangeal joint and proximal interphalangeal joint. This can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. Alternatively, previous/active osteomyelitis is possible. The osseous changes are similar to the previous study making an active osteomyelitis less likely

**38. On August 6, when additional radiographs were taken, the Defendant's veterinarian for the 3<sup>rd</sup> time claimed no osteomyelitis was present. (Exhibit 13, August 6, 2021, clinical records.) By this time the infection had taken another toe bone on that digit, according to the report DACVR Eric T. Hostnik of Brookfield Zoo.)**

Disagree - see above

**39. The Defendant continued trimming, even after receiving the DACVR's report finding septic osteitis, with surgical debridement as a possible cause in late August.**

- Disagree- the DACVR's report did not "find septic osteitis with surgical debridement as a possible cause" It recommended considering consider inflammatory erosive osteitis, septic distal interphalangeal erosive arthropathy, or septic osteitis as a potential cause for the Digit a P2 articular erosion. Again, later reports indicate the bones of the toe are present with some lytic changes that can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. It specifically states that active osteomyelitis is less likely to the similarity of osseous changes from previous studies submitted.

**40. In fact, the Defendant's veterinarian ordered "stall rest" beginning in August, unheard of for osteitis and canker. Ruth was forced to stay in the same fetid conditions that caused the infection that trimming forced into her toe bones. She developed cellulitis, an infection of the connective tissue, Ruth has not presented with cellulitis in records dating back to 2005.**

- Disagree - stall rest is not unheard of and in fact the typical treatment for canker in large hoof stock consists of three components, surgical debridement, keeping the feet/hoves dry and topical therapy. Stall rest is typically recommended to keep the animal out of mud and water. There are no "fetid conditions" in the barn, and they did not cause "the infection that trimming forced into her toe bones".
- There was no diagnosis of cellulitis.

**43. What is clear is that Ruth's infection in her front left foot has spread not only to her right foot in July, but to Emily's right foot too.**

- Disagree - in June it was noted that Ruth's right front foot also had pododermatitis- this was due to a bio-mechanical issue, not infection. It was anticipated based on her weight distribution to compensate for the left front foot and the foot consultant and staff were pro-actively monitoring and treating with corrective trimming to keep the area as quiescent as possible. Ms. Rowley does not seem to understand the difference between inflammation and infection.

**45. Emily has been on a reduced diet for six years.**

- Disagree - Emily receives a nutritionally balanced diet for her age and caloric needs. The diet is assessed annually and adjusted as needed throughout the year taking into consideration her medical condition, activity level, type of seasonal produce and browse availability and routine hay analysis.

**46. In July 2021, Emily was first diagnosed with pododermatitis (Exhibit 17, clinical records dated July 16, 2021). No trimming or cryotherapy was performed although Emily had a nail canker and was visibly in pain. In this video taken on July 15, 2021, she is seen holding her right front foot up.**

- Disagree - Emily was assessed in May 2021 and radiographs were taken in June 2021. Emily has received regular foot work by keeper staff to aid in resolution of the defect without aggressive medical therapy.
- Emily has received regular treatment and evaluation by experts as well as the veterinarian.

**47. Beginning in August 2021, Emily was separated from Ruth during the day by a metal gate between the outer yard and area near the barn. No records were available to plaintive for the period August 28 to September 15, 2021. (Exhibit 18 Clinical records August 28-September 9, and September 9 to September 25, 2021)**

- Disagree - there were no clinical notes entered into the medical record because there was nothing medical to report. Plaintiff received keeper daily reports with information on Emily for that time period.

**50. The Defendant City has attempted to attribute Ruth's pododermatitis and subsequent osteitis to her hoof conformation (pigeon-toed) stance). If etiology of the pododermatitis was not due to the presence of moist unsanitary conditions on hard packed substrate in the barn, Emily would not have presented with it- she is able to exercise, eat her full allotment of food, drink at will and is not pigeon-toed.**

- Disagree - It is a documented fact that elephants with conformational faults tend to develop foot problems as they begin to age because they walk in such a manner that unequal weight is distributed to unaffected limbs. It is a fact that Ruth has skeletal conformation abnormalities. Ms. Rowley is not qualified to conjecture or discuss etiology.

**63. Claim I Defendant City has taken Ruth and Emily in violation of Section 9 of the ESA: Unsanitary barn; failure to repair roof., forced confinement**

- Disagree - the barn is sanitary; roof repairs are on-going, and there is no forced confinement.

**64. Ruth's long list of injuries-loss of the use of her trunk, loss of half her tail, loss of half of her right ear, now includes loss of at least two toe bones. Emily may be losing toe bones, or worse if her pad is infected.**

- Disagree - Ruth's trunk paralysis pre-dates her time here. The Defendant agrees that the loss of part of her tail and a portion of her ear occurred during her time at the Zoo. Ruth has not lost two toe bones. Emily does not have a pad infection.

**65. This current harm was entirely preventable and was caused by the Defendant's actions and inactions. By not repairing the roof for over two years, not removing water sources in Ruth's stall, failing to remove the barn flooring for six months; failing to take waste-contaminated soil off site; failing to recognize Ruth's weight loss for two years despite visibly worsening body condition, and failing to let Ruth exercise, the Defendant City created perfect conditions for hoof rot. The Defendant then ignored recommendations from nine consulting veterinarians and experienced zoo staff at other zoos; ignored two sets of cultures and biopsies for three months and misread radiographs for four months, all of which caused bacteria to proliferate and infect Ruth's left front foot toe bones for osteitis to spread, for Ruth's right front foot to become infected, and for the bacterial infection to spread to Emily's right front foot.**

- Disagree - Barn roof repairs were conducted during the two-year period
- There is only one water source in Ruth's stall, and it is a freshwater feed to provide her with water when she chooses to drink from it rather than the automatic waterer.
- Sand rotation and re-grading occurs daily and larger scale rotation every few months

- Waste contaminated sand is removed daily and when large scale rotation occurs it is removed by DPI
- Ruth's weight has been monitored over the last two years closely. Zoo staff and the Veterinary team were monitoring her weight loss, adjusting diet accordingly and balancing it with the need for antibiotic therapy. She is on an upward trend since cessation of oral antibiotic therapy.
- With the exception of prescribed stall rest, the Defendant has not restricted Ruth's movements,
- The Defendant absolutely did not ignore recommendations from consultants and has worked closely with them throughout Ruth's treatment
- The Defendant did not ignore cultures and biopsies and ensured that the animal was receiving the appropriate antibiotics that the aerobic bacteria were sensitive to
- The Defendant did not misread the radiographs as they were presented. Neither the Veterinarian nor the radiologist could visualize P2 or P3 of Digit 2 due to technique and/or dense proliferative tissue.
- A diagnosis of osteitis has never formally been made- the inflammation is in the surrounding tissues.
- Ruth's right front foot is not infected.
- Emily's right front foot is not infected.

**66. Plaintiff asserts that these acts were part of an overall plan by the Defendant to intentionally cause Ruth harm-injury and death, although finding of a "take" does not require intent.**

- Disagree- Defendant has provided appropriate care and treatment exceeding all current standards for the care and management of Asian elephants in a captive setting.

**67. As a result of the Defendant's actions, Emily also developed pododermatitis and suffered harm.**

- Disagree - the pododermatitis was not the result of the Defendant's actions.

**68. Claim II. Take caused by Defendant City harms and harasses Ruth and Emily in violation of 9 of the ESA: Inadequate shelter in inclement weather, lack of exercise, food deprivation.**

- Disagree – see above.

**69. The City harms and harasses Ruth by confining her in a facility that exposes her to extreme heat and extreme cold without shelter and significantly disrupts her normal behavior patterns including sheltering and feeding.**

- Disagree - Ruth is not exposed to extreme heat and cold without shelter.
- The Defendant does not significantly disrupt her behavior patterns or deprive her of food.

**70. Ruth was routinely forced to stand still for up to four hours under the roofless hut, and also at the barn door, in extremely hot weather including during heat advisories, and extremely cold weather. During those times, she was prohibited from moving. This forced lack of exercise caused or exacerbated her arthritis in her joints and significantly contributed to her pododermatitis and osteitis.**

- Disagree - The Defendant did not force Ruth to stand still for four hours or prohibit her from moving.

**71. Further Ruth was deprived of food, water, and the ability to cool during that time, which caused her to lose 15% of her body weight. The resulting poor nutrition and poor body condition also significantly contributed to her pododermatitis and osteitis.**

- Disagree - The Defendant has never deprived Ruth of food, water, or the ability to cool herself.
- Food and water deprivation was not the cause of weight loss for this animal.
- Ruth's nutrition is not poor and did not significantly contribute to her pododermatitis

**73. On several occasions in August 2020, Ruth was kept inside the barn during 100-degree temperatures for hours with the barn doors closed. She was not allowed access to water to cool. When she was released, she immediately sought water to cool. The barn is not air conditioned.**

- Disagree - there was never a day the temperatures were over 100 in New Bedford in August 2020.
- Agree - during high heat index days, Ruth will sometimes prefer to remain in the barn, where temperatures are cooler.
- Disagree- Ms. Rowley cannot determine that access to water inside the barn is denied (which it is not).
- Agree - the barn is not air conditioned as there is no need for it.

**74. This intentional refusal to provide adequate nutrition and exercise resulted in a 532lb weight loss in the past two years, and a poor body condition. This radical weight loss was not identified as problematic until October 2021. This neglect significantly contributed to the pododermatitis and osteitis.**

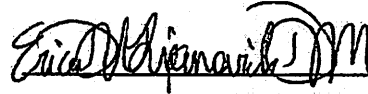
- Disagree - the Keepers and Veterinary staff have been closely monitoring Ruth's weight and adjusting her diet accordingly while she has been receiving long term antibiotics. In a hind gut fermenter such as an elephant. Long term antibiotic therapy changes the gut flora and can lead to weight loss. As expected, once antibiotics were discontinued, the animal has steadily gained weight.

**75. Emily was confined to the outer yard, an 8,000 s.f. area, for eight hours each day during the same periods of Ruth's confinement. This lack of exercise and exposure to extreme temperatures caused or exacerbated her arthritis and contributed to her hoof rot on her right front. Emily's reduced diet led to a 10% weight loss and rapid decline in her body condition that also contributed to her pododermatitis, an ongoing condition.**

- Disagree - Emily has not been exposed to extreme temperatures.
- Emily's did not have a rapid decline in body condition and weight loss did not contribute to her pododermatitis.

I hereby swear that the above statements are true based upon my personal knowledge and experience as well as my review of the relevant written records.

Sworn on this 20<sup>th</sup> day of January, 2022.

A handwritten signature in black ink, appearing to read "Erica Lipanovich", written over a horizontal line.

ERICA LIPANOVICH, DVM

## Resume 2022

### *Erica D.W. Lipanovich, DVM*

#### **Education**

Doctorate of Veterinary Medicine. Mississippi State University College of Veterinary Medicine, May 7, 2004.

#### **Zoo Experience**

March 2019 to present – Veterinarian for Buttonwood Park Zoo. Maintenance health screenings, nutritionist, deworming, necropsies and emergency medicine for over 200 species of small/large mammals, felids, hoofstock, primates, reptiles, amphibians, and megavertebrates. Instituted enrichment and training programs. AZA Inspection Team member. Supervisor of veterinary preceptors, veterinary technician preceptors and high school students. Proficient in ZIMs.

May 2014 to October 2014 – Contract Veterinarian at Oregon Zoo. Maintenance health screenings, necropsies and emergency medicine. Experience with ZIMs.

March 2008 to 2014 – Staff Veterinarian at Dickerson Park Zoo. Maintenance health screenings, nutritionist, deworming, necropsies and emergency medicine for over 600 species of small/large mammals, felids, hoofstock, primates, reptiles, amphibians, macropods, and megavertebrates. Instituted enrichment and training programs. Participated in Master Planning, Immobilization and Gun Committee Member and confiscations with state and federal agencies. AZA Inspection Team member, participant in annual Elephant Tuberculosis Meetings, and Avian Influenza Task Force member. Supervisor of veterinary preceptors and high school students. Proficient in Medarks.

January 2010-2012 – Emergency Relief Veterinarian for Kansas City Zoo. Assisted with routine health screenings and emergency medicine for more than 1,300 animals ranging from wallabies to large hoofstock.

July 2006 to March 2008 – Veterinary Resident (nonaccredited) at Denver Zoological Foundation. Assisted in maintenance health screenings, deworming, necropsies, and emergency medicine for over 4,000 animals such as small/large mammals, felids, hoofstock, primates, avian species, reptiles, megavertebrates, marine mammals and amphibians. Proficient in TRACKs.

April 2010 to June 2014 – Veterinarian with Marianna Avifauna Conservation Team member. Assisted this project in safe capture, holding and transporting of rare birds by either translocating or transporting to AZA institutions to establish captive breeding programs. This program is intending to provide the avifauna of the Mariana archipelago with the best possible chances for long-term survival, with the objectives of preserving, maintaining, and establishing self-sustaining populations of native birds secure from the threat of the brown tree snake.

2003 to 2004 – Preceptorships performed at the following zoos: Phoenix Zoo (4 weeks – large felids, hoofstock and avian species), Columbus Zoo (8 weeks – great apes, hoofstock, megavertebrates, reptiles, marine mammals {manatees}, avian species and large felids), Memphis Zoo (4 weeks – great apes, hoofstock, megavertebrates, avian and reptile species) and Audubon Zoo. Proficient in Medarks.

May 2001 to August 2001 – Hospital Keeper/Veterinary Technician at Audubon Zoo, New Orleans, LA. Assisted veterinarians with extensive zoo collection in daily treatments, examinations, medical procedures and necropsies. Performed fecal examinations, handled blood work and microbiology, conducted and ordered inventory, and filed radiographs and medical records. Proficient in Medarks.

#### **Other Work Experience**

September 2017 to February 2019 – Associate Veterinarian at Compass Veterinary Clinic. Small animal and exotic animal medicine. Work with snake breeders, two rabbit rescues, two critter teacher's groups, and area Petco's and Petsmarts.

December 2015 to February 2019 – Veterinarian with Dignified Pet Euthanasia Services. Available on-call euthanasia services for small animal and exotics.

## Resume 2022

February 2015 to February 2019 – Volunteer veterinarian for Turtle Ridge Wildlife Center. Assist in local wildlife examinations, deworming, and assessments. Assist local wildlife agents in beaver relocation project for the state of Oregon.

March 2014 to September 2017 – Associate Veterinarian at Willamette Valley Animal Hospital (Keizer, Salem and Tualatin locations). Small animal and exotic animal medicine. Work with two rabbit rescues, a reptile rescue and area Petco's and Petsmart's.

October 2014 to February 2019 – Contract veterinarian for Wildcat Ridge Sanctuary. Primary veterinarian for over 90 exotic felid species including tigers, cougars, bobcats, servals, and domestic hybrids. Emergency medicine and maintenance health screenings.

May 2004 to June 2006 – Associate Veterinarian at Palm Glen Animal Hospital. Small animal medicine and exotic medicine. Significant species handled: avian, reptiles, and small mammals. Regional veterinarian for five area Petco stores, avian rescue groups, ferret rescue groups and several snake breeders.

December 2005 to June 2006 – Relief Veterinarian for Primate Foundation of Arizona. Bi-annual physical examinations including blood work, radiographs, dentals, and treatments for 73 chimpanzees.

### Professional Organizations

AVMA (American Veterinary Medical Association) since 2004  
 ARAV (Association of Reptile and Amphibian Veterinarians) since 2005  
 AAV (Association of Avian Veterinarians) since 2005  
 AZA (Association of Zoos and Aquariums) since 2008  
 AAZV (American Association of Zoo Veterinarians) since 2003  
     Public Relations and Infectious Disease Committee member since 2009  
     Co-chair 2015 and Chair 2016  
     Infectious Disease Committee member since 2009  
 AAFV (American Association of Fish Veterinarians) since 2019  
 AEMV (Association of Exotic Mammal Veterinarians) since 2015  
 EAZWV (European Association of Zoo and Wildlife Veterinarians) since 2021

### Publications

"Taurine Deficiency in Giant Anteaters (*Myrmecophaga tridactyla*): Preliminary and Diagnostic Results," Presented at the AAZV Annual Conference 2003.  
 "Squamous Cell Carcinoma in the Sinuses of Two Przewalski's Wild Horses (*Equus caballus przewalskii*)," Presented at the AAZV Annual Conference.  
 Gamble, K.C., and M.M. Clancy (eds). Infectious Diseases of Concern to Captive and Free Ranging Animals in North America, 1<sup>st</sup> and 2<sup>nd</sup> ed. 2013 and 2016. Infectious Disease Committee, American Association of Zoo Veterinarians, Yulee, Florida. 1098 pp. Website address: <http://www.aazv.org/?page=IDM2013>  
 "Erysipelothrix in Two Red Kangaroo (*Macropus rufus*)" Presented to the AAZV Annual Conference 2014.  
 "Babesiosis in Captive Maned Wolves (*Chrysosyn brachys*)" Presented to the AAZV Annual Conference 2015.  
     - Currently working on publication with updated information and new survey of cases for 2021.  
 "Megacolon Treatment, Subsequent Colonic Resection with Anastomosis in Red Tegu, *Salvator rufescens*, and Management."  
     - Submitted to Journal of Herpetological Medicine and Surgery 2022.

## EXHIBIT G

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Nov 16, 2021

Clinical note

Date	Time	Note Author
Nov 16, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<div><input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2</div> <div><input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5</div> <div><input type="checkbox"/> Radiograph</div>

**Subjective**

Recheck.

Keeper reports that this patient has been in great spirits the last five days. She is eating better and is ambulating back to her normal stride and effort. Taking oral medications pretty well - the gabapentin can be tricky to get into patient. Keeper has slowly been increasing the beet pulp that is given and she is taking it well. Still refusing the rice bran.

Keeper reports that the track on the left front pododermatitis lesion has been more open and have been able to get more canker powder into track. Has also observed that the pink tissue is growing still and seems to be almost touching the ground when she ambulates now.

**Objective**

Patient evaluated in lateral recumbency.

Left front, digit 2: Hard, thick brown keratin like tissue is approximately 5 cm in length and 10 cm in width. There is a definite margin of normal skin and then the hard keratin tissue. The ventral lesion is 6 cm by 5 cm. The tissue is pale pink, nodular and very soft. The surrounding tissue has a white fibrotic like tissue that has a dry layer of keratin to skin like tissue. It is approximately 1 cm in height. The ventral edge of the new growth with the white fibrotic tissue is growing up but seems to be very close to the ground. There is a thin layer of necrotic debris over the top of this pink tissue that easily is wiped off. The track opening has two, raised, bulbous, raised, pink tissue nodules present. It surrounds 7/8ths of the lateral opening. Palpation within the track has a mild to moderate amount of purulent debris and can easily pass the index finger which is 1.25 cm in diameter without causing any movement of the surround tissue. Can feel the stalk and loose tear drop shaped tissue within the center - seems thinner and more mobile. Approximately 1 cm in height and length, thin and unable to exteriorize the tissue. The pad is still moderately loose around the D1 and medial D2 area - appears to extend about 3-4 cm but unable to fully determine. Pad is much thicker and starting to reattach - 5 cm reattached pad from medial D3 to half way underneath D2. Patient showed no evidence of discomfort during palpation and manipulation if tracks and soft tissue.

Right front, digit 5: The nail is still slowly growing out along the cuticle. The tissue feels like normal soft tissue where the white proliferative tissue was present in the center of D5. There is a significant demarcation of normal pad that goes to the defect along the plantar lesion. It is approximately 7 cm wide by 4.5 cm to the new nail growth.

Left front, digit 3: There is a triangular section of peeling skin over the middle dorsal cuticle of the digit that is 4 cm in length and 1.5 cm in height. Peeling. No inflammation to the surround skin and was not painful to manipulation.

Right front, digit 5: no change in size, shape or depth to the proliferative tissue. No new nail growth present.

The zygomatic arch lesions on the right side: there are only two lesions of significant size present that are approximately 1.25 cm in size and very shallow.

The zygomatic arch lesion on the left side: approximately 1.5 cm in length and 0.25 cm in width.

Assessment

Left front, digit 2: continues to slowly close, pad is reattaching and growing out. The pink bulbous tissue has increased in size.

Right front, digit 5: no change/stable.

zygomatic arch lesions have decreased in size and become more shallow. Improved significantly

Plan

Two view radiographs of the left front digit 2 taken - exposure was taken at two different exposures. Digit three on the left front was included as a reference for bone density for the radiology consulting group. No radiopaque structure found. The hard keratin tissue is noticeably more radiodense then the surrounding tissue.

Blood was collected from the medial saphenous for elephant panel at University of Miami and vitamin D panel to University of Michigan. Banked samples.

Scrubbed gently D2 on the left front with diluted chlorhexidine solution. Palpated the track and flushed thoroughly with diluted chlorhexidine solution. Moderate amount of loose purulent necrotic debris came out. Able to get the track to flush if the syringe is aimed towards the lateral aspect of P2. Patted everything dry with a towel.

Wiped out some of the excess debris between the new and old pad growths. Sprinkled canker powder into this area gently.

Packed the track and both front feet lesions with canker powder. Wiped the canker powder off of the two raised bulbous like growths of pink granulation tissue around the track opening. Applied Mohs paste topically. Didn't bandage as patient has never indicated any evidence of pain or interest in the paste.

To continue with oral gabapentin once daily and ibuprofen twice daily.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Procedure

Radiograph

Onset Date

Nov 16, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Nov 16, 2021 00:00

Notes/Comments

Sample

Sample Detail

Collection Date/Time

Nov 16, 2021 00:00

Sample Type

Whole Blood

Anatomical Source/Tissue

MEDIAL SAPHENOUS

Additives/Preservatives

EDTA

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Nov 16, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Nov 16, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

MEDIAL SAPHENOUS

Additives/Preservatives

~

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Nov 16, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Nov 16, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

MEDIAL SAPHENOUS

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Nov 16, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Nov 11, 2021

Clinical note

Date

Nov 11, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.

Keeper reports that this animal was doing a lot of foot resting today of the left front. However she is in good spirits and ambulating normal for her. All four feet and digits are the same temperature.

E Lipanovich, DVM

Objective

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Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 10, 2021

Clinical note

Date

Nov 10, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.  
Keeper reports that this patient continues to remain in good spirits, moving better and eating well still. All four feet and digits are the same temperature.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 09, 2021

Clinical note

Date

Nov 09, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.  
Keeper reports that this animal seems to be much better today and eating much better as well.  
To continue to monitor.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 08, 2021

Clinical note

Date	Time	Note Author
Nov 08, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Update.  
Keeper reports that patient didn't eat all of her feed overnight, holding the left front up today and not wanting to walk around much.  
Stall rest today. Temperature checked on all four feet - all the same temperature, no heat.  
Could be that patient is sore from all of the foot work on Saturday.  
To monitor closely.  
E Lipanovich, DVM

**Objective**

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**Assessment**

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**Plan**

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**Animal Care Staff Medical Summary**

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 07, 2021

Clinical note

Date	Time	Note Author
Nov 07, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Update.  
Patient was reluctant to walk all the way out today - unsure if it is weather related or if it is her feet are sore. All four feet and digits are the same temperature.  
To monitor.  
E Lipanovich, DVM

**Objective**

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**Assessment**

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**Plan**

~

**Animal Care Staff Medical Summary**

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 06, 2021

Clinical note

<b>Date</b>	<b>Time</b>	<b>Note Author</b>
Nov 06, 2021	00:00	Erica Lipanovich
<b>Significant</b>	<b>Private</b>	<b>Active Problems</b>
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5
<b>Subjective</b>		
Elephant foot expert consult. Patient does not like the rice bran and is starting to pick out the oral gabapentin. To recheck radiographs and bloodwork in 10 more days and then make an assessment if needs to go back on antibiotics. However have seen improvement in appetite already since discontinuing the antibiotics.		
<b>Objective</b>		
Patient was evaluated in lateral recumbency. There is significant increase in pink granulation tissue around the track opening on digit 2, left front. The track inside is still smooth but constricted. Contained a small amount of necrotic debris within the track. When the track was flushed today with diluted chlorhexidine solution and syringe, found that it was flushing through the pad defect slowly. There is also an increase in heat present to the digit (4-5 degrees warmer than the surrounding foot). No other changes noted from previous exam. The right front digit 5 is showing some mild enlargement around thenail cuticle and digit itself.		
<b>Assessment</b>		
Overall, consultant felt that the left front is improving but is still at a stage 1 healing (still trying to get the tissue to quiet down and not proliferate). Very happy with the level of healing that is showing. Starting to see some changes to digit 5 on the right front that are a little concerning as she is still bearing more weight that wanted on the right front, which is showing in the changes being seen.		
<b>Plan</b>		
Trimming/Filing:  Left front, digit 2 - pad was filed some slightly, some of the necrotic pad layer was removed between the old and new pad, filed the brown keratin like tissue over the lateral aspect of the tissue  Left front, digit 3 - filed and rounded digit 3 nail  Right front, digit 2 - underneath nail tip has a small gap with moist necrotic tissue. Routine maintenance filing and trimming. Plan to apply canker powder to this area daily.  Right front, digit 5 - routine maintenance filing and trimming  Left rear - routine maintenance filing and trimming  Right rear - routine maintenance filing and trimming    Canker powder applied within the pad defect and external lesions on both front feet.  Discussed with another consultant - plan to continue with twice weekly CO2 therapy for now. No other changes to medical  Discussed diet - since she won't take the rice bran, elect to increase the beet pulp from 1.5 pounds to 3 pounds (slowly).  E Lipanovich, DVM		

Animal Care Staff Medical Summary

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Nov 04, 2021

Clinical note

<b>Date</b>	<b>Time</b>	<b>Note Author</b>
Nov 04, 2021	00:00	Erica Lipanovich
<b>Significant</b>	<b>Private</b>	<b>Active Problems</b>
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

- ☒ Proliferative pododermatitis (canker), Right front digit 5
- ☒ Radiograph

Subjective

Radiographs/Recheck.

Objective

Patient was in lateral recumbency.

Left front, digit 2: Hard, thick brown keratin like tissue is approximately 8 cm in length and 10 cm in width. There is a definite margin of normal skin and then the hard keratin tissue. The ventral lesion is 6.5 cm by 6 cm. The tissue is pale pink, nodular and very soft. The surrounding tissue has a white fibrotic like tissue that has a dry layer of keratin to skin like tissue. There is a thin layer of necrotic debris over the top of this pink tissue that easily is wiped off. The track opening has a raised, pedunculated pink tissue present. It surrounds 2/3rd of the lateral opening. Palpation within the track has a mild to moderate amount of purulent debris. Can feel the stalk and loose tear drop shaped tissue within the center - seems thinner and more mobile. Same length and unable to exteriorize the tissue. The pad is still moderately loose around the D1 and medial D2 area - appears to extend about 3-4 cm but unable to fully determine. Pad is much thicker and starting to reattach - 5 cm reattached pad from medial D3 to half way underneath D2. Patient showed no evidence of discomfort during palpation and manipulation if tracks and soft tissue.

Right front, digit 5: The nail is still slowly growing out along the cuticle. The tissue feels like normal soft tissue where the white proliferative tissue was present in the center of D5. There is a significant demarcation of normal pad that goes to the defect along the plantar lesion. It is approximately 7 cm wide by 4.5 cm to the new nail growth.

Assessment

Left front, digit 2: continues to slowly close, pad is reattaching and growing out.

Plan

Two view radiographs of the left front digit 2 taken - exposure was less in strength so that all grit would show. No radiopaque structure found. The hard keratin tissue is noticeably more radiodense then the surrounding tissue.

Scrubbed gently D2 on the left front with diluted chlorhexidine solution. Palpated the track and flushed thoroughly with diluted chlorhexidine solution. Moderate amount of loose purulent necrotic debris came out. No longer communicating with the D1 lateral side.

Packed the track and both front feet lesions with canker powder.

To continue with oral gabapentin once daily and ibuprofen twice daily. Keeper reports that she is getting smart at finding the gabapentin. She is also refusing the rice bran again, even though this is a brand that she has eaten in the past.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

Radiograph

Onset Date

Nov 04, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Nov 04, 2021 00:00

Notes/Comments

Nov 03, 2021

Clinical note

Date

Nov 03, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Keepers report that patient is eating everything well and seems more enthusiastic about her appetite.  
Have been unable to find the small radiopaque structure on the radiographs. To examine via radiographs tomorrow.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info	
Date Written	Nov 02, 2021
Start Date	Nov 03, 2021 00:00
Prescribed By	Erica Lipanovich
Prescribed For	1 animal
Reason For Treatment	Medical

Weight Info	
Date	Nov 02, 2021
Measurement Value	2,644 kg
Estimate	Yes
Exclude From Reference Intervals	Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

14doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

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Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

~

Staff Instructions

Administer 4 tablets administered orally once daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Nov 16, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
~	~	~	~

Nov 02, 2021

Clinical note

Date

Nov 02, 2021

Significant

No

Subjective

Imaging Report for Asian Elephant^Ruth^^ 5

Time

00:00

Private

No

History:

See above.

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Findings:

October 28, 2021: 5 radiographs are available for review. Left forelimb is compared to September 23, 2021.

LEFT FORELIMB:

The soft tissue associated with D2 is thicker than the previous study. There is no longer the focal protuberance of tissue from the abaxial aspect of P2. The cutaneous borders of D2 remains irregular and heterogeneous with stippled mineral foci associated with indentations for the cutaneous margin. There is a focal mineral/metal superimposed on the

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

interdigital space of D2 and D1. There is an irregular defect within the central aspect of the P3 of D2; there are heterogeneous margins to the defect. There is also increased soft tissue spacing between the P3 and P2 for D2. The distal aspect of P2 of D3 remains irregular with ill-defined borders. There is irregular mineral proliferation on the proximal aspect of P2 of D2. The abaxial articular border of P1 of D2 is faint and ill-defined. There are periarticular osteophytes and enthesophytes of the D2 PIP. There is a similar small defect of the proximolateral portion of P2 of D2. There is irregular mineral proliferation on the diaphysis of the P1 of D2. There are periarticular osteophytes and enthesophytes of the D2 MCP.

The cutaneous defects extend to the interdigital space between D2 and D3. There are two ossified bodies of P3 of D3; the borders of the P3 fragments are smooth. There are similar osteophytes on the margins of the distal P2 of D3. The articular margins between proximal P2 and distal P1 remain indistinct; there is sclerotic bone and smooth periarticular osteophytes of D3 PIP. The MCP of D3 remains narrowed; there are lobular osteophytes on the margins of D3 metacarpophalangeal joint.

RIGHT FORELIMB:

There is a moderate amount of soft tissue thickening centered on D5. The peripheral aspect of the D5 is heterogeneous with stippled mineral foci. The convexity of D5 is thicker tissue than the adjacent D4 margins. There are multiple P3 centers of ossification of D5. Numerous mixed amorphous mineral and structured minerals are superimposed on D5. The P2 and P1 margins of D5 are smooth. The P3 of D4 is also made of multiple smoothly margined mineral bodies. The amorphous minerals also superimpose with D4. There is mild interdigital soft tissue thickening; most affecting the axial aspect of D5.

- D1 = first digit
- D2 = second digit
- D3 = third digit
- D4 = fourth digit
- D5 = fifth digit
- MCP = metacarpophalangeal joint
- PIP = proximal interphalangeal joint

Conclusion:

LEFT FORELIMB:

1. Recurrent or progressive generalized soft tissue thickening associated with the medial aspect of the left forelimb (D1, D2, and D3) most severe centered on D2; there is mineralization of the cutaneous tissues associated with the swelling. This is likely related to chronic proliferative pododermatitis. There is no longer a focal protuberance of tissue. A component of fibrosis related to the pododermatitis is likely. The granular mineral opacities are likely superficial debris along the distal extremity solar margin and dystrophic mineralization of the inflammatory tissues that extends proximally on D2 +/- D3. There is also superimposition of a metal foreign body or embedded metal foreign materials.
2. There is similar osteolysis of the P3, P2, and distal P1 of D2 of left forelimb - portions of the lysis involve the articular surfaces of the distal interphalangeal joint and proximal interphalangeal joint. This can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. There is a pathologic fracture of P3; this may have been present previously, but not clearly imaged. Previous/active infectious osteomyelitis is possible.
3. Chronic chip fracture of proximolateral P2 of D2.
4. Mild D2 metacarpophalangeal degenerative joint disease.
5. Moderate degenerative joint disease of D3 proximal interphalangeal joint and metacarpophalangeal joint with narrowing of joint spaces. The indistinct articular margins can be collapsing of the joint space; which would indicate cartilaginous damage. The persistent appearance of the joint space narrowing increases the confidence of a pathologic change.
6. Mild degenerative joint disease of D3 distal interphalangeal joint.
7. Bipartite P3 of D3; less likely, chronic trauma of the P3.

RIGHT FORELIMB:

1. Moderate pododermatitis, fibrosis, cellulitis, and/or edema of right forelimb of D5 +/- dystrophic mineralization of the tissue. There is also interdigital pododermatitis/cellulitis.
2. Bipartite P3 of D4 and D5; less likely, chronic trauma of the P3.
3. Superficial mineral debris of the distal extremity +/- dystrophic mineralization of soft tissues.

Eric T. Hostnik  
Eric T. Hostnik, DVM, MS, DACVR, DACVR-EDI

Objective

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Assessment

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Plan

Discussed with staff results of the radiology reoport.  
Keepers are to do a thorough external evaluation of her front left foot for the possible small metallic object (suspect it is a minerally dense rock). To have patient re-radiographed tomorrow while in lateral recumbency to see if we can determine if keepers were able to find it.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Also discussed with keepers that since the patient is becoming increasing difficult for chute compliance for the rectal medication administration and the weight loss, plan to discontinue the antibiotics for now. To continue with oral daily ibuprofen and gabapentin.  
To repeat radiographs and blood work in 2 weeks.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Oct 28, 2021

Clinical note

Date

Oct 28, 2021

Significant

No

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

☒ RADIOGRAPHS

Subjective

Results.  
Bloodwork results show a stable patient with normal acute phase proteins and electrophoresis.  
Radiographs were performed today while patient was in lateral recumbency of the front right and front left feet. To submit to Chicago Radiology/Brookfield for interpretation.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

RADIOGRAPHS

Onset Date

Oct 28, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Oct 28, 2021 00:00

Notes/Comments

Oct 26, 2021

Clinical note

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Date	Time	Note	Author
Oct 26, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Recheck.  
Keepers report patient has been picky about her diet the last 36 hours, is being difficult in attitude and still being difficult to get into the chute for rectal medication administration.  
Have been doing canker powder only - difficult to get the powder into the track on the left front.  
Still receiving CO2 therapy twice weekly and canker powder application two to three times daily. No change to gabapentin, metronidazole and enrofloxacin treatments.  
Keepers have been attempting oral probiotics into patient - vehemently declining it.

Objective

Patient was in lateral recumbency.  
The left front lesion - The ventral tissue is now a light pink and very soft on palpation - much more then just a few days ago. The necrotic layer of tissue over the ventral section of the lesion and was approximately 1-2 mm in depth in some locations. The lateral edge around the entire lesion has a 0.8 cm white granulation like tissue edge. SEems more constricted down around the pink granulation tissue along the ventral lesion. Seems very well vascularized. The tracks are the same however there is a moderate amount of increase again in granulation tissue at the track opening which makes packing the track very difficult. There is mild roughening within the track to the surfaces however there is also a moderate amount of necrotic debris present so unsure if this is just necrotic tissue or proliferative tissue. Small amount of bleeding from the opening during palpation. There is a large brown, thick, keratin like scab present along the lateral surface of the lesion. Firmly attached along the dorsal rim over the new skin growth. Nonpainful on palpation. The pad underneath the D2 lesion is still not attached but due to the canker powder and less pliable, unable to determine depth at this time without causing signfiicant pain to patient. The D2 nail remnant is flush with the surrounding keratin scab.  
The right front lesion is the same size and shape. Keepers have kept the nail filed and smooth so as to not cause any pain when patient is bearing weight. No change to the pad defect or the depth of the lesion. Has a thin layer of brown papillae like tissue that flakes off to show dry white cushion like material underneath. New nail is starting to grow along the caudal aspect.  
Zygomatic arch lesions, right side - significantly decreased in size however still has a moderate amount of sand impacted within them every morning as patient prefers to lay on this side in the sand. 1-2 mm in depth and no erythema present.  
Zygomatic arch lesion, left side - the left middle zygomatic arch has a vertical oblong shaped crack that is now open. Approximately 1 cm wide and 3 cm in length. Extends about 3-4 mm through the dermis to the underlying soft tissue. Mild erythema present.

Assessment

Zygomatic lesion, left side - pressure from laying in sand  
Left front D2 - the white concentric granulation like tissue seems to be normal tissue and the pink central granulation tissue feels more normal, and not fibrotic  
Right front D5 - no change/stable.

Plan

Scrubbed the lesion and flushed the track with diluted chlorhexidine solution. Noted that there was no longer a communication through the track to the underside of the pad underneath D2 nail towards D1. Moderate amount of necrotic tissue flushed out of the tracks (multiple flushings). Seemed uncomfortable when flushing the tracks. The loose tear drop shaped tissue section is still inside and not able to exteriorize it.  
Used a #15 scalpel blade to scrape off the necrotic tissue along the ventral lesion. Very minimal bleeding. No cryotherapy performed. Plan to discontinue for now but to be prepared to if this tissue changes.  
Used #15 scalpel blade to remove the loose edge of the hard keratin like scab along the lateral edge so that sand can not impact in this area. Very thick (4 mm) and hard. Patted dry and applied canker powder to the ventral lesion. Packed within the track thoroughly. Loosely sprinkled underneath the loose pad.  
Canker powder applied to the right front lesion as well.  
Blood collected for elephant panel to University of Miami. Serum and plasma banked. No change to treatment for now.  
To continue with daily cleaning and vitamin A/D ointment application to the zygomatic arch lesions for now.  
To monitor closely.  
If bloodwork and radiographs look good, may consider discontinuing rectal antibiotics. Also discussed with staff that may consider a transfauation post antibiotic therapy if we think this may help with rebalance of the GI tract to assist with weight gain. Keepers offered a different brand of rice bran, which patient refused to eat. Attempted another brand of rice bran, and will start when it comes in.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample
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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Oct 26, 2021 00:00

Sample Type

Whole Blood

Anatomical Source/Tissue

SAPHENOUS

Additives/Preservatives

EDTA

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Oct 26, 2021	~/~	Available	UMAWLAB/24/22

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Oct 26, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

SAPHENOUS

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Oct 26, 2021	~/~	Available	UMAWLAB/37/36

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail		Sample Quality	
Date Requested	Oct 26, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	UMAWLAB	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Notes/Comments

EPH Interpretation:  
Mild changes in some fractions are present. As the A/G ratio is not decreased, this likely reflects a normal variation in this patient. Followup as clinically warranted.

Acute Phase Protein Interpretation:  
SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300 mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process.  
As in other species, HP is a minor APP in elephants. Two to three fold increases in this APP have been observed in clinically abnormal elephants. To date, the highest observed value in our laboratory has been 9 mg/ml. In most species, HP is believed to be a preferred marker of chronic inflammation. In contrast to CRP and SAA, the increase in HP is delayed 4-6 days after stimulus and its expression is prolonged. As with other APP, repeated measures should have prognostic value.

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Glucose	80 mg/dL	Global sp RI: 54 - 119   83 [83] N=807 (90)	~	No	No	No
BUN	14 mg/dL	Not calculated	~	~	~	No
Creatinine	1.4 mg/dL	Global sp RI: 0.7 - 2.0   1.2 [1.2] N=815 (95)	~	No	No	No
BUN/Creat ratio [c]	~ ratio	Global sp RI: 17.5 - 58.8   32.0 [30.1] N=101 (16)	~	No	No	~
Na	131 mmol/L	Global sp RI: 124 - 138   130 [130] N=821 (94)	~	No	No	No
K	4.3 mmol/L	Global sp RI: 3.8 - 5.4   4.5 [4.4] N=809 (93)	~	No	No	No
Chloride	89 mmol/L	Global sp RI: 85 - 99   91 [91] N=764 (78)	~	No	No	No
Mg	2.9 mg/dL	Global sp RI: 1.80 - 2.90   2.31 [2.30] N=427 (64)	~	No	No	No
Ca	10.5 mg/dL	Global sp RI: 9.1 - 11.8   10.5 [10.5] N=866 (100)	~	No	No	No
Phos	5.4 mg/dL	Global sp RI: 3.0 - 7.0   4.8 [4.7] N=823 (95)	~	No	No	No
Ca:Phos ratio	1.9 ratio	Global sp RI: 1.3 - 3.3   2.4 [2.3] N=117 (14)	~	No	No	No
Total CO2	22 mmol/L	Global sp RI: 20.0 - 28.0   23.8 [24.0] N=406 (42)	~	No	~	No
Amylase	1,887 U/L	Global sp RI: 0 - 4,179   1,398 [1,213] N=195 (29)	~	No	No	No
Lipase	11 U/L	Global sp RI: 2 - 31   10 [9] N=144 (28)	~	No	No	No
Cholesterol	<50 mg/dL	Global sp RI: 11 - 65   43 [44] N=330 (62)	~	No	No	No
Uric Acid	<0.5 mg/dL	Global sp RI: 0.0 - 1.0   0.2 [0.2] N=606 (69)	~	No	No	No
Total Protein	8.9 g/dL	Global sp RI: 6.3 - 9.2   7.8 [7.8] N=878 (96)	~	No	No	No
Albumin unspecified	3.4 g/dL	Not calculated	~	~	~	No
A:G ratio	0.62 ratio	Global sp RI: 0.5 - 1.0   0.7 [0.7] N=605 (51)	~	No	No	No



Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Exclud. from RI	Clinical Finding	Reviewed
Est. WBC count	10.9 *10^3 cells/μL	Global sp RI: 0 - 13   7 [7] N=105 (12)	~	No	~	No
RBC [a]	2.65 *10^6 cells/μL	Global sp RI: 1.86 - 3.53   2.65 [2.62] N=2723 (112)	~	No	No	No
HGB [a]	9.70 g/dL	Global sp RI: 9.9 - 15.7   12.4 [12.3] N=2698 (113)	Low	No	No	No
HCT [a]	33 %	Global sp RI: 24.6 - 42.0   32.4 [32.0] N=2657 (101)	~	No	No	No
MCV	125 fL	Global sp RI: 102.1 - 146.0   123.4 [122.0] N=2484 (96)	~	No	No	No
MCHC [c]	293.94 g/L	Global sp RI: 329 - 399   369 [370] N=251 (29)	Low	No	No	~
Neutrophil count [m]	0.01 *10^3 cells/μL	Global sp RI: 0.00 - 8.23   3.06 [3.46] N=44 (16)	~	No	No	No
Neutrophil % [m]	37 %	Global sp RI: 12.0 - 46.6   26.1 [25.0] N=416 (43)	~	No	No	No
Band count [m]	0.22 *10^3 cells/μL	Basic Stats: ~ - ~   0.98 [0.00] N=25 (7)	~	No	~	No
Band % [m]	2 %	Global sp RI: 0.0 - 5.0   0.4 [0.0] N=418 (36)	~	No	No	No
Lymphocyte count [m]	5.02 *10^3 cells/μL	Global sp RI: 1.46 - 9.90   4.72 [4.30] N=732 (17)	~	No	No	No
Lymphocyte % [m]	18 %	Global sp RI: 5.0 - 39.0   18.6 [17.5] N=1080 (54)	~	No	No	No
Monocyte count [m]	3.53 *10^3 cells/μL	Global sp RI: 0.000 - 11.341   3.734 [4.059] N=47 (15)	~	No	No	No
Monocyte % [m]	41 %	Global sp RI: 10.0 - 73.0   51.1 [54.0] N=1087 (59)	~	No	No	No
Eosinophil count [m]	2.29 *10^3 cells/μL	Global sp RI: 0.000 - 1.320   0.225 [0.138] N=43 (13)	High	No	No	No
Eosinophil % [m]	2 %	Global sp RI: 0.0 - 6.0   2.2 [2.0] N=1024 (56)	~	No	No	No
Basophil count [m]	0.03 *10^3 cells/μL	Global sp RI: 0.000 - 0.141   0.006 [0.000] N=42 (11)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 1.0   0.2 [0.0] N=611 (41)	~	No	No	No
nRBC's [m]	~ /100 WBC	Global sp RI: 0 - 1   0 [0] N=76 (19)	~	No	~	~
Polychromasia	~		~	~	~	~
Anisocytosis	rare (1+)		~	~	~	No
Target Cells	rare (1+)		~	~	~	No
Platelets	19 *10^3 cells/μL	Global sp RI: 108 - 839   304 [218] N=2433 (98)	Low	No	No	No
Est. Platelets	465 (x 10^3/ul)		~	~	~	No

Sample Detail (GSN: S-PGW21-005986)			
Collection Date/Time	Oct 26, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Whole Blood	Collected By	Erica Lipanovich
Anatomical Source/Tissue	SAPHENOUS	Reason	~
Additives/Preservatives	EDTA	Exclude from reference intervals	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Prescription/Treatment

Basic Info

Date Written

Oct 25, 2021

Start Date

Oct 25, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Oct 25, 2021

Measurement Value

2,644 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,991.6 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

6.8 mg/kg

Duration

30days

Concentration Of Drug

800 mg

Administrated Dose Quantity

22.490 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 22.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Nov 23, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
~	~	~	~

Oct 23, 2021

Clinical note

Date

Oct 23, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Keepers report that patient is moving slower and resting the left front more than previously. No swaying has been observed throughout the day but patient has been moving around the yard more.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Taking medications well but still not very cooperative for entering the chute for rectal administration.

Objective

Rechecked the front lesions while standing in the stall in barn and presenting feet.  
Left front - the D2 lesion is still very prominent. The large thick, dry keratin like scab is still firmly attached and nonpainful to palpation. It almost appears to be a toe nail except that it follows the conformity of the skin. The ventral aspect of the lesion has a layer of necrotic tissue present over it. The lateral margin of white granulation tissue is the same in density and thickness. Unable to palpated the track as patient would move the foot when attempted. The pad is still loose underneath D2. No odor present and the only moisture present is along the ventral section.  
Right front - the D5 lesion is the same size and shape. Dry.

Assessment

D2, left front - bruised soft tissue from activity versus infection versus abscess.  
D5, right front - no change, still present and stable.

Plan

Scheduled for radiographs and blood collection this week.  
To debride the necrotic tissue this week.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Oct 20, 2021

Prescription/Treatment

Basic Info

**Date Written** Oct 20, 2021  
**Start Date** Oct 20, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Oct 20, 2021  
**Measurement Value** 2,644 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

7doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally OR 4 tablets administered orally. Once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Oct 26, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Nov 02, 2021 00:00	Karen Veary-Santos	Complete	~
Nov 01, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 31, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 30, 2021 00:00	Michael Weaver	Complete	~
Oct 29, 2021 00:00	Michael Weaver	Complete	~
Oct 27, 2021 00:00	Michael Weaver	Complete	~
Oct 26, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 25, 2021 00:00	Kathryn Harding	Complete	~
Oct 24, 2021 00:00	Michael Weaver	Complete	~
Oct 23, 2021 00:00	Michael Weaver	Complete	~
Oct 22, 2021 00:00	Michael Weaver	Complete	~
Oct 21, 2021 00:00	Joseph Golden	Complete	~

Prescription/Treatment

Basic Info

Date Written

Oct 20, 2021

Start Date

Oct 20, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Oct 20, 2021

Measurement Value

2,644 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Printed: Nov 18, 2021

Buttonwood Park Zoo

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40,890 mg

Dosage Amount

15.465 mg/kg

Administrated Dose Quantity

40,890 mg

Frequency

every 2 days (q2d)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally every other day for 14 doses. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

40.9 gm

Calendar Items

Dispensing Records

Administration Records

Oct 19, 2021

Clinical note

Date

Oct 19, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Keepers report patient is doing well and still being difficult to get into the chute for rectal medication administration.  
Have been doing canker powder only - difficult to get the powder into the track on the left front.  
Still receiving CO2 therapy twice weekly and canker powder application two to three times daily. No change to gabapentin, metronidazole and enrofloxacin treatments.

Objective

Patient was in lateral recumbency.  
The left front lesion - necrotic layer of tissue over the ventral section of the lesion and was approximately 5-8 mm in depth in some locations. The lateral edge around the entire lesion has a 1 cm white granulation like tissue edge. Slight papilla appearance but not loose. Seems very well vascularized. The tracks are the same however there is a moderate amount of increase in granulation tissue at the track opening which makes packing the track very difficult. There is mild to moderate roughening within the track to the surfaces however there is also a large amount of necrotic debris present so unsure if this is just necrotic tissue or proliferative tissue. Small amount of bleeding from the opening during palpation. There is a large brown, thick, keratin like scab present along the lateral surface of the lesion. Loose along the dorsal rim over the new skin growth. Can feel some sand impacted within this area. Nonpainful on palpation. The pad underneath the D2 lesion is still not attached but due to the canker powder and less pliable,

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

unable to determine depth at this time without causing significant pain to patient. The D2 nail remnant is flush with the surrounding keratin scab. The right front lesion is the same size and shape. Keepers have kept the nail filed and smooth so as to not cause any pain when patient is bearing weight. No change to the pad defect or the depth of the lesion. Has a thin layer of brown papillae like tissue that flakes off to show dry white cushion like material underneath. Zygomatic arch lesions, right side - significantly decreased in size however still has a moderate amount of sand impacted within them every morning as patient prefers to lay on this side in the sand. 1-2 mm in depth and no erythema present.

Assessment

Zygomatic lesions - improved.  
Left front D2 - the white concentric granulation like tissue seems to be normal tissue; slowly healing  
Right front D5 - no change/stable.

Plan

Scrubbed the lesion and flushed the track with diluted chlorhexidine solution. Noted that there was still a communication through the track to the underside of the pad underneath D2 nail towards D1. Large amount of necrotic tissue flushed out of the tracks (multiple flushings). Used a #15 scalpel blade to scrape off the necrotic tissue along the ventral lesion. Very minimal bleeding. No cryotherapy performed. Plan to discontinue for now but to be prepared to if this tissue changes. Used #15 scalpel blade to remove the loose edge of the hard keratin like scab along the lateral edge so that sand can not impact in this area. Very thick (4 mm) and hard. Patted dry and applied canker powder to the ventral lesion. Packed within the track thoroughly. Loosely sprinkled underneath the loose pad. Canker powder applied to the right front lesion as well. To recheck in a few days. No change to treatment for now. Did have discussion with staff and plan to allow patient to have access to the front of enclosure as long as she isn't too active. To monitor closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Oct 16, 2021

Clinical note

Date	Time	Note	Author
Oct 16, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	
		<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Recheck/Trimming.  
This patient was placed into lateral recumbency - no change to treatment as prescribed. Still receiving CO2 therapy twice weekly and keepers report she is excellent for them. Keepers report that patient is still doing very well. Moving around normally for this patient. Still offering extra hay - alfalfa and the molasses are mixed in with it. Also getting extra alfalfa cubes scattered in enrichment. To discuss with staff if want to add in rice bran with regular bran. Radiographs at the end of the month to be scheduled with staff and blood to be collected at that time.

Objective

D2, left front - the dorsal aspect has grown normal skin about 1/3rd to 1/2 of the way down and is completely normal over the D3. There is no longer a defect over D3. There is a large thick brown dry keratin like scab over the lateral half of the lesion to the ridge of the lower aspect of the lesion that is 7 cm in length and 9 cm in width. It is starting to peel back along the dorsal edge as healthy, new skin is growing underneath it. The ridge that was white and swirled is now golden brown and very hard, like nail. However suspect this is a continuation of the keratin like scab. It is dry and nonpainful and firmly attached. The lower aspect of the lesion is circular in shape, prominent, and covered in necrotic tissue that is peeling away. Surrounding this 6.5 cm by 9 cm area of necrotic tissue where the tracks are, is a 1-1.5 cm section of white tissue that has areas that appears to be normal granulation tissue intermixed with some of the crabmeat like tissue. Seems the thickest around the dorsal area and directly under the D2 nail (no longer triangular). The tracks palpate the same in direction but is more constrictive inside. Also the surfaces are not as smooth as they use to be - more loose necrotic tissue present within the track. The tear drop 1 cm by 3 cm section of proliferative tissue in the middle of the track opening is still present. Unable to exteriorize at all. When flushed with diluted chlorhexidine solution, lots of necrotic debris came out and still communicates to the medial edge of D2. The pad is still separated underneath D1-D2 and extends about 5-6 cm underneath the foot. Unable to visualize a lot of the space. Feel that the pad underneath D2 is thicker than previous week. D5, right front - no significant change is present. There is no increase in proliferative tissue and no change in the size or shape. Zygomatic arch lesions - these rub areas (from laying in sand) are filling in with normal healthy light pink granulation tissue. They have decreased in size by half and about half have resolved. There are still about 4 that are quarter sized.

Assessment

Zygomatic arch - healing well  
D5 - stable, no change  
D2 - more normal skin growth/regrowth; granulation tissue still present and unsure if proliferative at this time

Plan

Scrubbed the D2 lesion and flushed all tracks with diluted chlorhexidine solution. Using a #10 scalpel blade, gently removed some of the peeling hard brown keratin like tissue so that sand could not get impacted within the regrowth. Used #10 scalpel blade to gently scrape and remove some of the necrotic tissue over the entire pink granulation tissue bed. Very small amount of bleeding but removed about 3-6 mm of necrotic tissue off. Scrubbed again gently with diluted chlorhexidine solution. Patted dry. Metal cryotherapy used to the white tissue section along both lateral aspects of the lesion. Two freeze/thaw cycles performed. To decrease frequency.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Canker powder applied within the tracks, in between the pad and foot and the entire pink granulation tissue bed.  
To recheck in two days and see how the tissue appears.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Oct 13, 2021

Prescription/Treatment

Basic Info

Date Written

Oct 12, 2021

Start Date

Oct 13, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Oct 12, 2021

Measurement Value

2,644 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

7doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally OR 4 tablets administered orally. Once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Dispensing Records

Administration Records

Oct 11, 2021

Clinical note

Date

Oct 11, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
This patient has been doing well per keeper staff. Been allowing more and more time outside. Keepers have been applying the canker powder into the tracks and the outer lesions on both front feet.  
Patient is tolerating the treatments well. Depending on the keeper depends on how far they are able to pack the tracks with canker powder due to finger dimensions.  
Had cryotherapy performed over the weekend by vet tech and keeper staff.  
Keepers report that patient is eating everything being offered but is still not cleaning up the hay - some days patient is very picky with the hay despite being mixed with the Lucerne alfalfa/molasses chopped/compressed bags.  
Still receiving the enrofloxacin/metronidazole rectally every other day and gabapentin daily (every other day rectally and every other day oral). Patient is doing better about going into the chute but still taking a long time.  
Cryotherapy to be performed by keepers today with metal to the triangular section underneath the nail and along the lateral D3 lesion - two freeze/thaw cycles performed.  
To have keepers continue for this week and to trim at the end of the week with patient in lateral recumbency.  
To monitor closely.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Oct 06, 2021

Clinical note

DateTimeNote Author

Oct 06, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Lab results  
Bloodwork results indicate that the inflammatory markers have decreased significantly, which supports what is being seen visually at this time for this patient.  
To continue to monitor bloodwork monthly for now unless the pododermatitis lesions change.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Oct 06, 2021

Start Date

Oct 06, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Oct 06, 2021

Measurement Value

2,644 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

7doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally OR 4 tablets administered orally. Once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Oct 12, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Oct 12, 2021 00:00	Michael Weaver	Complete	~
Oct 11, 2021 00:00	Karen Veary-Santos	Complete	orally
Oct 10, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 09, 2021 00:00	Michael Weaver	Complete	orally
Oct 08, 2021 00:00	Michael Weaver	Complete	~
Oct 07, 2021 00:00	Michael Weaver	Complete	orally
Oct 06, 2021 00:00	Michael Weaver	Complete	~

Oct 05, 2021

Clinical note

Date

Oct 05, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck with treatment.

Successfully collected blood from patient this morning while in chute. Submitted to University of Miami for elephant panel and banked plasma

Keepers report that this patient is becoming increasing more difficult to get into the chute for rectal medication administration.

She is moving around well and seems to be eating well also.

She does not like the platinum plus supplement - only receives it if keepers take extreme measures to hide it in items and even then she gets wise to it part of the way through these treat items.

Despite being offered chopped hay, produce, cooked veggies and pellets/grain, this animal is continuing to drop weight. To have discussion with keeper staff and upper management and see if want to consider any changes to the diet.

Objective

Left front - D2 lesion is about the same size and shape. There has been an increase in the white proliferative tissue underneath the nail area and adjacent to the D3 - appears to

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

have doubled in size. There is no change to the pad underneath the D2 towards D1. It is still loose along this margin and dry inside. The lesion is 7.5 cm by 9 cm. The tracks are the same except that the proliferative tear drop shaped tissue inside the track has doubled in length. All communications are the same. There is a thick coating of necrotic tissue present over the granulation tissue.

Right front - D5 lesion is the same size and shape. There is still a small nail edge present and new nail growth developing.

Assessment

~

Plan

Plan to trim the necrotic tissue from the granulation tissue surface next week.

Flushed all tracks and scrubbed the lesions with diluted chlorhexidine solution.

Patted dry.

Metal cryotherapy performed to the white proliferative tissue only - two freeze/thaw cycles performed of 15-20 seconds each.

Canker powder applied to both lesions and within the track and underneath the pad.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

**Collection Date/Time** Oct 05, 2021 00:00

**Sample Type** Serum

**Anatomical Source/Tissue** ~

**Collection Method** Phlebotomy

**Collected By** Karen Veary-Santos

**Reason** ~

**Exclude from reference intervals** No

Sample Quality

**Color** ~

**Color Intensity** ~

**Clarity** ~

**Additional Characteristics** ~

**Degraded** No

Pre-Sampling Conditions

**Fasting Duration** < 2 hours

**Restraint Type** Behavioral

**Activity** Low activity

Initial Holding Conditions

**Initial Holding Temp.** ~

**Initial Holding Duration** ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Oct 05, 2021	~/~	Available	UMAWLAB/34/33

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

**Collection Date/Time** Oct 05, 2021 00:00

**Sample Type** Whole Blood

**Anatomical Source/Tissue** ~

**Additives/Preservatives** EDTA

**Collection Method** Phlebotomy

**Collected By** Karen Veary-Santos

**Reason** ~

**Exclude from reference intervals** No

Sample Quality

**Additional Characteristics** ~

**Degraded** No

Pre-Sampling Conditions

**Fasting Duration** < 2 hours

**Restraint Type** Behavioral

**Activity** Low activity

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Initial Holding Conditions

Initial Holding Temp. ~

Initial Holding Duration ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Oct 05, 2021	~/~	Available	UMAWLAB/22/22

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Oct 05, 2021

Requested By

Erica Lipanovich

Laboratory

UMAWLAB

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

Fibrinogen= 200 mg/dl  
Hemolysis 2+  
Alk Phos= 62 U/L  
Beta 1= 1.13 g/dl  
Beta 2= 1.53 g/dl  
EPH Interpretation  
The total protein is increased. By % TP, the fractions are normal. This may reflect mild patient or sample dehydration.

Acute Phase Protein Verified on: 10/06/21  
Test Level Comment Range Low Range High Units of Measure  
Serum amyloid A 2.4 -- 0 42.5 mg/L  
SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process.  
Haptoglobin 1.76 HI 0 1.1 mg/ml  
As in other species, HP is a minor APP in elephants. Two to three fold increases in this APP have been observed in clinically abnormal elephants. To date, the highest observed value in our laboratory has been 9mg/ml. In most species, HP is believed to be a preferred marker of chronic inflammation. In contrast to CRP and SAA, the increase in HP is delayed 4-6 days after stimulus and its expression is prolonged. As with other APP, repeated measures should have prognostic value.

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Glucose	65 mg/dL	Global sp RI: 54 - 119   83 [83] N=807 (90)	~	No	No	No
BUN	15 mg/dL	Not calculated	~	~	~	No
Creatinine	1.3 mg/dL	Global sp RI: 0.7 - 2.0   1.2 [1.2] N=815 (95)	~	No	No	No
BUN/Creat ratio [c]	~ ratio	Global sp RI: 17.5 - 58.8   32.0 [30.1] N=101 (16)	~	No	No	~
Na	130 mmol/L	Global sp RI: 124 - 138   130 [130] N=821 (94)	~	No	No	No
K	5.2 mmol/L	Global sp RI: 3.8 - 5.4   4.5 [4.4] N=809 (93)	~	No	No	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Chloride	92 mmol/L	Global sp RI: 85 - 99   91 [91] N=764 (78)	~	No	No	No
Mg	3.2 mg/dL	Global sp RI: 1.80 - 2.90   2.31 [2.30] N=427 (64)	High	No	No	No
Ca	11.0 mg/dL	Global sp RI: 9.1 - 11.8   10.5 [10.5] N=866 (100)	~	No	No	No
Phos	4.4 mg/dL	Global sp RI: 3.0 - 7.0   4.8 [4.7] N=823 (95)	~	No	No	No
Ca:Phos ratio	2.5 ratio	Global sp RI: 1.3 - 3.3   2.4 [2.3] N=117 (14)	~	No	No	No
Total CO2	15 mmol/L	Global sp RI: 20.0 - 28.0   23.8 [24.0] N=406 (42)	Low	No	~	No
Amylase	2,068 U/L	Global sp RI: 0 - 4,179   1,398 [1,213] N=195 (29)	~	No	No	No
Lipase	13 U/L	Global sp RI: 2 - 31   10 [9] N=144 (28)	~	No	No	No
Cholesterol	52 mg/dL	Global sp RI: 11 - 65   43 [44] N=330 (62)	~	No	No	No
Uric Acid	<0.5 mg/dL	Global sp RI: 0.0 - 1.0   0.2 [0.2] N=606 (69)	~	No	No	No
Total Protein	9.6 g/dL	Global sp RI: 6.3 - 9.2   7.8 [7.8] N=878 (96)	High	No	No	No
Albumin unspecified	3.8 g/dL	Not calculated	~	~	~	No
A:G ratio	0.66 ratio	Global sp RI: 0.5 - 1.0   0.7 [0.7] N=605 (51)	~	No	No	No
AST	23 U/L	Global sp RI: 10 - 35   18 [16] N=718 (83)	~	No	No	No
ALT	5 U/L	Global sp RI: 0 - 15   4 [3] N=378 (58)	~	No	No	No
LDH	1,229 U/L	Global sp RI: 241 - 1,512   661 [613] N=236 (48)	~	No	No	No
Creatine Kinase	236 U/L	Global sp RI: 54 - 376   141 [118] N=700 (81)	~	No	No	No
GGT	<10 U/L	Global sp RI: 0 - 13   5 [5] N=704 (87)	~	No	No	No
Tot. Bili.	0.6 mg/dL	Global sp RI: 0.1 - 0.4   0.2 [0.2] N=743 (92)	High	No	No	No
Conj./Direct Bili.	0.5 mg/dL	Global sp RI: 0.0 - 0.5   0.1 [0.1] N=294 (37)	~	No	No	No
Pre-albumin EPH	0.25 g/dL	Global sp RI: 0.00 - 0.43   0.19 [0.21] N=160 (17)	~	No	No	No
Albumin EPH	3.03 g/dL	Global sp RI: 2.10 - 3.95   2.99 [3.03] N=168 (23)	~	No	No	No
α-1 Globulin EPH	0.12 g/dL	Global sp RI: 0.03 - 0.86   0.28 [0.09] N=174 (24)	~	No	No	No
α-2 Globulin EPH	1.46 g/dL	Global sp RI: 0.32 - 1.34   0.87 [0.97] N=174 (24)	High	No	No	No
β-1+2 Globulin EPH	2.66 g/dL	Global sp RI: 1.10 - 2.50   1.73 [1.74] N=102 (15)	High	No	No	No
γ Globulin EPH	2.08 g/dL	Global sp RI: 0.90 - 2.34   1.48 [1.43] N=173 (24)	~	No	~	No
Serum Amyloid A	2.4 mg/L	Global sp RI: 0.2 - 214.9   29.9 [5.1] N=105 (28)	~	No	~	No
Haptoglobin	1.76 mg/ml	Global sp RI: 0.14 - 4.00   1.30 [1.04] N=206 (27)	~	No	~	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail (GSN: S-PGW21-005936)

Collection Date/Time	Oct 05, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Serum	Collected By	Karen Veary-Santos
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result

Test Request Detail

Date Requested	Oct 05, 2021
Requested By	Erica Lipanovich
Laboratory	UMAWLAB
Analysis Start Date	~
Analysis Equipment	~
Insufficient Sample	No

Sample Quality

Color	~
Color Intensity	~
Clarity	~
Consistency	~
Additional Characteristics	~
Degraded	No

Notes/Comments

taget cells 1+  
automated platelet count= 374 x 10^3  
Gen: Due to small platelet size in elephants, the automated platelet count may not be accurate and thus a manual platelet estimate is provided.  
Reactive monocytes- few

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

### Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Est. WBC count	10.3 *10^3 cells/μL	Global sp RI: 0 - 13   7 [7] N=105 (12)	~	No	~	No
RBC [a]	2.76 *10^6 cells/μL	Global sp RI: 1.86 - 3.53   2.65 [2.62] N=2723 (112)	~	No	No	No
HGB [a]	10.30 g/dL	Global sp RI: 9.9 - 15.7   12.4 [12.3] N=2698 (113)	~	No	No	No
HCT [a]	35.1 %	Global sp RI: 24.6 - 42.0   32.4 [32.0] N=2657 (101)	~	No	No	No
MCV	127 fL	Global sp RI: 102.1 - 146.0   123.4 [122.0] N=2484 (96)	~	No	No	No
MCHC [c]	293.45 g/L	Global sp RI: 329 - 399   369 [370] N=251 (29)	Low	No	No	No
Neutrophil count [m]	3.3 *10^3 cells/μL	Global sp RI: 0.00 - 8.23   3.06 [3.46] N=44 (16)	~	No	No	No
Neutrophil % [m]	32 %	Global sp RI: 12.0 - 46.6   26.1 [25.0] N=416 (43)	~	No	No	No
Band count [m]	0.31 *10^3 cells/μL	Basic Stats: ~ - ~   0.98 [0.00] N=25 (7)	~	No	~	No
Band % [m]	3 %	Global sp RI: 0.0 - 5.0   0.4 [0.0] N=418 (36)	~	No	No	No
Lymphocyte count [m]	1.85 *10^3 cells/μL	Global sp RI: 1.46 - 9.90   4.72 [4.30] N=732 (17)	~	No	No	No
Lymphocyte % [m]	18 %	Global sp RI: 5.0 - 39.0   18.6 [17.5] N=1080 (54)	~	No	No	No
Monocyte count [m]	4.74 *10^3 cells/μL	Global sp RI: 0.000 - 11.341   3.734 [4.059] N=47 (15)	~	No	No	No
Monocyte % [m]	46 %	Global sp RI: 10.0 - 73.0   51.1 [54.0] N=1087 (59)	~	No	No	No
Eosinophil count [m]	0.10 *10^3 cells/μL	Global sp RI: 0.000 - 1.320   0.225 [0.138] N=43 (13)	~	No	No	No
Eosinophil % [m]	1 %	Global sp RI: 0.0 - 6.0   2.2 [2.0] N=1024 (56)	~	No	No	No
Basophil count [m]	0 *10^3 cells/μL	Global sp RI: 0.000 - 0.141   0.006 [0.000] N=42 (11)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 1.0   0.2 [0.0] N=611 (41)	~	No	No	No
nRBC's [m]	0 /100 WBC	Global sp RI: 0 - 1   0 [0] N=76 (19)	~	No	~	No
Polychromasia	none seen		~	~	~	No
Anisocytosis	rare (1+)		~	~	~	No
Est. Platelets	525 (manual)		~	~	~	No

Sample Detail (GSN: S-PGW21-005935)

Collection Date/Time	Oct 05, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Whole Blood	Collected By	Karen Veary-Santos
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	EDTA	Exclude from reference intervals	No

Oct 04, 2021

### Clinical note

Date	Time	Note	Author
------	------	------	--------

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Oct 04, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

- ☑ Proliferative pododermatitis (canker), Left front digit 2
- ☑ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Radiograph consultation results.

Objective

Imaging Report for Asian Elephant^Ruth^^ 5

History:

Proliferative pododermatitis to the front left D2 lesion.

Findings:

September 23, 2021: 2 radiographs are available for review. Compared to August 9, 2021.

The cutaneous margins of D2 remains irregular; there is a concave margin along the periphery of D2. There is also a focal irregular proliferative thickening of the soft tissue along the axial aspect of D2. The tissue of D2 is heterogeneous with small defects and stippled, granular mineral materials. The overall soft tissue of D2 is less compared to the previous study. The medial margin of the P3 of D2 is indistinct; the borders are of the P3 are irregular. There are focal defects of the P3 of D2. There are also defects of P2 of D2. The P2 of D2 is heterogeneous with permeative lysis and chip fracture of the proximolateral P2. The distal articular margin of P1 of D2 is heterogeneous. There are osteophytes on the margins of D2 metacarpophalangeal joint.

The cutaneous defects extend to the interdigital space between D2 and D3. There are two ossified bodies of P3 D3; the borders of the P3 fragments are smooth. There are similar osteophytes on the margins of the distal P2 of D3. The articular margins between proximal P2 and distal P1 are indistinct; there is sclerotic bone and smooth osteophytes. The metacarpophalangeal joint of D3 is narrower than D2; there are lobular osteophytes on the margins of D3 metacarpophalangeal joint.

D2 = second digit  
D3 = third digit  
MCP = metacarpophalangeal joint  
PIP = proximal interphalangeal joint

Conclusion:

1. Reduced soft tissue thickening associated with D2; there is focal persistent soft tissue that likely represents lingering proliferative pododermatitis. Overall, there is partial resolution of the proliferative pododermatitis. The tissue may also be fibrosis, hyperkeratosis, and/or unlikely dermal neoplasm. The granular mineral opacities is likely superficial debris +/- dystrophic mineralization of the inflammatory tissues.
2. Loss of bone of the P3, P2, and distal P1 of D2 - portions of the lysis involve the articular surfaces of the distal interphalangeal joint and proximal interphalangeal joint. This can be a result of the chronic proliferative pododermatitis with osseous resorption/erosive arthropathy. Alternatively, previous/active osteomyelitis is possible. The osseous changes are similar to the previous study making an active osteomyelitis less likely.
3. Chronic chip fracture of proximolateral P2 of D2.
4. Mild D2 metacarpophalangeal degenerative joint disease.
5. Moderate degenerative joint disease of D3 proximal interphalangeal joint and metacarpophalangeal joint with indistinct articular margins. The indistinct articular margins can be collapsing of the joint space; which would indicate cartilaginous damage. Apparent narrowing of the joints may be accentuated by angle of the radiographs.
6. Mild degenerative joint disease of D3 distal interphalangeal joint.
7. Bipartite P3 of D3; less likely, chronic trauma of the P3.

Recommendation:

There is greater detail and resolution of the anatomy in the current study; this is likely related to the decreased swelling of the soft tissue and the collimation of the radiographs. The greater detail resolution makes osseous changes more apparent and easier to identify.

Eric T. Hostnik  
Eric T. Hostnik, DVM, MS, DACVR, DACVR-EDI

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Oct 03, 2021

Clinical note

Date	Time	Note Author
Oct 03, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Keeper reports that rectal medications are becoming more difficult to administer again as patient does not want to go into the chute.  
To discuss if we try to go back to every other day.

Objective

Patient standing and holding the foot up for evaluation today.  
The pad under the left front D2 lesion seems more prominent. There has been minimal change to the lesion otherwise.  
The right front D5 lesion is about the same. There appears to be more prominent cuticle along the lateral half of the nail but appears superficial. Difficult to tell as on the metal foot stand and is resting on it.

Assessment

Minimal change to both lesions.

Plan

Plan to evaluate the feet more thoroughly tomorrow while in lateral recumbency.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 30, 2021

Clinical note

Date	Time	Note Author
Sep 30, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Elephant foot expert/Recheck.  
Keepers report that patient has been going out reliably and ambulating normallyl for this patient.  
Canker powder is increasingly become more difficult within the track of the left front D2 lesion.

Objective

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Patient in lateral recumbency for short periods of time with two sessions of trimming/treatment performed.

D5 right front - no changes to size and shape of lesion. There was some necrotic tissue in the linear pad indentation. The white crabmeat like tissue is still present in the center and squishy but not moist. The nail is still separating along the cuticle in locations but more firmly attached in other ways. Nonpainful to palpation. Dry.

D2 left front - more normal skin layers developing along the entire dorsal half of the lesion. Further wound stricturing has occurred and can tell that the lesion is shrinking (normal wound closure) along the top half of the lesion. Slight peeling of the old skin margin showing new skin growth underneath. There is still a raised ridge of swirled to cauliflower like, white tissue at the ventral margin. The tissue is very dry over the entire lesion except in the tracks. The ventral lesion is very dry, hard and nonpainful to palpation. The triangular section of white crabmeat like tissue along the ventral D2 nail is the slightly more raised and shape is same size. The previous abscess site is almost completely closed. There is some white to grey like necrotic tissue within the old opening. The track has a piece of tissue sticking out of the ventral opening. Palpation of this revealed it is the tip of the small piece/flap of tissue that has remained inside the track that has grown in length. No change palpated to the base and stalk of this growth. The track still bifurcates around either side of the phalange however the track that runs to the lateral side is very constricted down with more tissue. Difficult to palpate within the track to the caudal aspect of it. The bifurcation that runs medial of the phalange is not as constricted down and does still curve around to the previous abscess site opening but unable to palpate the site still. The skin to pad section of the foot between D1 and D2 is still separated and still communicates with the track. There is normal skin closing over this section of former white crabmeat like tissue and is very dry. The pad to pad section that is separated along the entire D2 area is still present. No change to this.

Zygomatic arch on right side - no new lesions but they are still present. No inflammation present.

Assessment

~

Plan

The zygomatic arch lesions were cleaned with diluted chlorhexidine and to continue with vitamin A/D ointment indefinitely.

Scrubbed the foot with a gentle brush and diluted chlorhexidine solution and flushed the tracks with diluted chlorhexidine solution.

The D2 nail and pad edge between D1/D2 was trimmed aggressively with a hoof knife. Can now see that there is a significant pocket between the pad and the skin. There is healthy, thick skin present underneath that is nonpainful but does extend atleast 3-4 cm underneath. There is some necrotic tissue underneath where the nail was removed with some proliferative white tissue underneath it that is well vascularized. Some of the black hard necrotic tissue along the ventral margin of the lesion was trimmed with a #10 scalpel blade as it was becoming loose. Pockets of bloody fluid present but very small amount. Some of the necrotic tissue was trimmed along the pad margin directly underneath the ventral lesion.

The pad was filed down along D1 and D2 and the nail of D3. D5 on the right front was filed and trimmed back some but very minimally.

Canker powder was sprinkled into pad space to aid drying and allow normal pad to start regrowing. Canker powder packed to both front lesions and within the track of the left front.

Reminded keepers that we still need blood collected.

Plan is to have patient in lateral recumbency three times weekly for cryotherapy, possible trimming and exploration of the tracks with thorough packing of tracks with canker powder. Continue the antibiotics, anti-inflammatory and analgesics. To add in some probiotics and offer more of the compressed hay to try to offset the weight loss.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 29, 2021

Prescription/Treatment

Basic Info

Date Written

Sep 28, 2021

Start Date

Sep 29, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 28, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

20,445 mg

Dosage Amount

7.6 mg/kg

Administrated Dose Quantity

20,445 mg

Frequency

every 2 days (q2d)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

Semisolid

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3 scoops dissolved completely in water rectally every other day for 14 doses. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Oct 25, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Oct 31, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 29, 2021 00:00	Michael Weaver	Complete	~
Oct 27, 2021 00:00	Michael Weaver	Complete	~
Oct 25, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 22, 2021 00:00	Michael Weaver	Complete	~
Oct 18, 2021 00:00	Kathryn Harding	Complete	~
Oct 16, 2021 00:00	Michael Weaver	Complete	~
Oct 14, 2021 00:00	Michael Weaver	Complete	~
Oct 12, 2021 00:00	Michael Weaver	Complete	~
Oct 10, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 08, 2021 00:00	Michael Weaver	Complete	~
Oct 06, 2021 00:00	Michael Weaver	Complete	change to every other day
Oct 05, 2021 00:00	Michael Weaver	Complete	~
Oct 04, 2021 00:00	Michael Weaver	Complete	~
Oct 03, 2021 00:00	Michael Weaver	Complete	~
Oct 02, 2021 00:00	Michael Weaver	Complete	~
Oct 01, 2021 00:00	Michael Weaver	Complete	~
Sep 30, 2021 00:00	Michael Weaver	Complete	~
Sep 29, 2021 00:00	Karen Veary-Santos	Complete	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Sep 28, 2021

Start Date

Sep 29, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 28, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Dose Amount

Dosage Amount

Administrated Dose Quantity

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

3,223.2 mg

1.2 mg/kg

4.029 count

Frequency

Duration

Delivery Route

Loading Dose

once a day (sid)

7doses

Oral (p.o.)

~

Form of Drug

Concentration Of Drug

Tablet

800 mg

Treatment Response

Clinical Response

Adverse Effects

Adverse Effects Note:

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~

Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Oct 05, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Oct 05, 2021 00:00	Michael Weaver	Complete	~
Oct 04, 2021 00:00	Michael Weaver	Complete	~
Oct 03, 2021 00:00	Michael Weaver	Complete	~
Oct 02, 2021 00:00	Michael Weaver	Complete	~
Oct 01, 2021 00:00	Michael Weaver	Complete	~
Sep 30, 2021 00:00	Michael Weaver	Complete	~
Sep 29, 2021 00:00	Karen Veary-Santos	Complete	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Sep 28, 2021

Start Date

Sep 29, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 28, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40,890 mg

Dosage Amount

15.223 mg/kg

Administrated Dose Quantity

40,890 mg

Frequency

once a day (sid)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally every day for 14 doses. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

40.9 gm

Calendar Items

Date	Title	Assigned To	Done
Oct 12, 2021	5 / Asian elephant / MIG12-29545888 Metronidazole treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Oct 18, 2021 00:00	Kathryn Harding	Complete	~
Oct 16, 2021 00:00	Michael Weaver	Complete	~
Oct 14, 2021 00:00	Michael Weaver	Complete	~
Oct 12, 2021 00:00	Michael Weaver	Complete	~
Oct 10, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 08, 2021 00:00	Michael Weaver	Complete	~
Oct 06, 2021 00:00	Michael Weaver	Complete	switch to every other day
Oct 05, 2021 00:00	Michael Weaver	Complete	~
Oct 04, 2021 00:00	Michael Weaver	Complete	~
Oct 03, 2021 00:00	Michael Weaver	Complete	~
Oct 02, 2021 00:00	Michael Weaver	Complete	~
Oct 01, 2021 00:00	Michael Weaver	Complete	~
Sep 30, 2021 00:00	Michael Weaver	Complete	~
Sep 29, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sep 27, 2021

Clinical note

Date	Time	Note Author
Sep 27, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Treatment.  
Advised keepers to continue with flushing of the tracks with diluted chlorhexidine solution and canker powder for now. No cryotherapy for now as want to see what tissue is still actively growing at this time.  
E Lipanovich, DVM

**Objective**

~

**Assessment**

~

**Plan**

~

**Animal Care Staff Medical Summary**

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 26, 2021

Clinical note

Date	Time	Note Author
Sep 26, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Treatment/Assessment.  
Keeper reports that patient has not been sore or ambulating abnormally for her the last few days. Keeper struggles to get canker powder in the large track in the left foot when she stands as it is painful for packing because it has to be pushed harder.

**Objective**

Patient in lateral recumbency for evaluation/treatment today.  
D5 right front - no changes to size and shape of lesion. There was some necrotic tissue in the linear pad indentation. Scrubbed out with diluted chlorhexidine. No bleeding. The white crabmeat like tissue is still present in the center and squishy but not moist. The nail is still separating along the cuticle in locations but more firmly attached in other ways. Nonpainful to palpation. Dry.  
D2 left front - more normal skin layers developing along the entire dorsal half of the lesion. There is still a raised ridge of swirled to cauliflower like, white tissue at the ventral margin. The tissue is very dry over the entire lesion except in the tracks. The ventral lesion is very dry, hard (from Mohs paste application several days ago) and nonpainful to palpation. The triangular section of white crabmeat like tissue along the ventral D2 nail is the same size and shape as well. There is some excess necrotic skin/tissue along the D3 lesion that could be normal cuticle attempting to grow but unsure as it is very loose. Nonpainful. The previous abscess site is almost completely closed. There is some white to grey like necrotic tissue within the old opening. The track has a piece of tissue sticking out of the ventral opening. Palpation of this revealed it is the tip of the small piece/flap of tissue that has remained inside the track that has grown in length. No change palpated to the base and stalk of this growth. The track still bifurcates around either side of the phalange however the track that runs to the lateral side is very constricted down with more tissue. Difficult to palpate within the track to the caudal aspect of it. The bifurcation that runs medial of the phalange is not as constricted down and does still curve around to the previous abscess site opening but unable to palpate the site still. The skin to pad section of the foot between D1 and D2 is still separated and still communicates with the track. There is normal skin closing over this section of former white crabmeat like tissue and is very dry. The pad to pad section that is separated along the entire D2 area is still present. No change to this.  
Zygomatic arch on right side - no new lesions but they are still present. No inflammation present.

**Assessment**

Proliferative pododermatitis - no longer active at this time for right front D5 and stable  
Proliferative pododermatitis - stable to the dorsal half of the lesion, still unsure about the ventral aspect of the lesion and the tracks.

**Plan**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Have communicated with two of the experts who recommend to not flush the tracks in the left front foot with diluted chlorhexidine but allow it to dry out completely. They do not feel that there is an increase risk of abscess development if it is dry inside. However plan to continue to flush to make sure sand and grit are not causing issues. Feel the canker powder application is compounded into the tracks on the days she is not in lateral recumbency, which could impact success rate with keeping the track clean/dry. Also compounded factors if keepers can not pack the track with canker powder throughout the day to continue to keep it dry. Scrubbed the outer D2 lesion with diluted chlorhexidine for assessment and did flush the track with diluted chlorhexidine and a 60 ml syringe. Minimal discharge extracted during the flush and very very difficult to get it to flush through the small opening of the old abscess site. However palpation showed a moderate amount of grey to bloody debris within the track that was only able to remove via manual palpation. Flushed it again and lots of necrotic debris came out. Removed some of the white crabmeat like tissue underneath the D2 lesion with a #10 scalpel blade and the necrotic tissue along the D3 edge was removed with a sharp hoof knife. No bleeding. Filed the D3 nail a little. Packed both front feet lesions including the tracks and pads with canker powder only today. Can go outside after rectal medication administration, which she is still receiving gabapentin, enrofloxacin and metronidazole SID. No cryotherapy performed today but will do some tomorrow. E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 25, 2021

Clinical note

Date	Time	Note Author
Sep 25, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy performed to the white crabmeat like tissue along the ventral lesion adjacent to D3 and underneath the nail of D2 on the left front. Canker powder only for the last two days for topical therapy. E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Sep 25, 2021	Date	Sep 25, 2021
Start Date	Sep 25, 2021 00:00	Measurement Value	2,686 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		
Treatment Detail			

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,991.6 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

6.7 mg/kg

Duration

30days

Concentration Of Drug

800 mg

Administrated Dose Quantity

22.490 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 22.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Oct 24, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Oct 24, 2021 00:00	Kathryn Harding	Complete	~
Oct 24, 2021 00:00	Kathryn Harding	Complete	~
Oct 23, 2021 00:00	Michael Weaver	Complete	~
Oct 23, 2021 00:00	Michael Weaver	Complete	~
Oct 22, 2021 00:00	Michael Weaver	Complete	~
Oct 22, 2021 00:00	Michael Weaver	Complete	~
Oct 21, 2021 00:00	Joseph Golden	Complete	~
Oct 21, 2021 00:00	Kathryn Harding	Complete	~
Oct 20, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 20, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 19, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 19, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 18, 2021 00:00	Kathryn Harding	Complete	~
Oct 18, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 17, 2021 00:00	Kathryn Harding	Complete	~
Oct 17, 2021 00:00	Kathryn Harding	Complete	~
Oct 16, 2021 00:00	Michael Weaver	Complete	~
Oct 16, 2021 00:00	Michael Weaver	Complete	~
Oct 15, 2021 00:00	Michael Weaver	Complete	~
Oct 15, 2021 00:00	Michael Weaver	Complete	~
Oct 14, 2021 00:00	Kathryn Harding	Complete	~
Oct 14, 2021 00:00	Michael Weaver	Complete	~
Oct 13, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 13, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 12, 2021 00:00	Kathryn Harding	Complete	~
Oct 12, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Oct 11, 2021 00:00	Kathryn Harding	Complete	~
Oct 11, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 10, 2021 00:00	Kathryn Harding	Complete	~
Oct 10, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 09, 2021 00:00	Michael Weaver	Complete	~
Oct 09, 2021 00:00	Michael Weaver	Complete	~
Oct 08, 2021 00:00	Michael Weaver	Complete	~
Oct 08, 2021 00:00	Michael Weaver	Complete	~
Oct 07, 2021 00:00	Michael Weaver	Complete	~
Oct 07, 2021 00:00	Michael Weaver	Complete	~
Oct 06, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 06, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 05, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 05, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 04, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 04, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 04, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 03, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 03, 2021 00:00	Karen Veary-Santos	Complete	~
Oct 02, 2021 00:00	Michael Weaver	Complete	~
Oct 02, 2021 00:00	Michael Weaver	Complete	~
Oct 01, 2021 00:00	Michael Weaver	Complete	~
Oct 01, 2021 00:00	Michael Weaver	Complete	~
Sep 30, 2021 00:00	Michael Weaver	Complete	~
Sep 30, 2021 00:00	Michael Weaver	Complete	~
Sep 29, 2021 00:00	Kathryn Harding	Complete	~
Sep 29, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 28, 2021 00:00	Kathryn Harding	Complete	~
Sep 28, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 27, 2021 00:00	Kathryn Harding	Complete	~
Sep 27, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 26, 2021 00:00	Kathryn Harding	Complete	~
Sep 26, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 25, 2021 00:00	Joseph Golden	Complete	~
Sep 25, 2021 00:00	Michael Weaver	Complete	~

Sep 23, 2021

Clinical note

Date

Sep 23, 2021

Significant

No

Subjective

Recheck.

Keeper reports that it was very difficult to pack the canker powder into the track last night as there seems to be more tissue that had grown within a few hours.

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

☒ RADIOGRAPHS

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Objective

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess is still very small and unable to palpate. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present inside around a loose pedunculated section of tissue. The tip is necrotic but the stalk appears intact. Minimal to no change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue with the remaining being a grey coloration and moist.  
Right zygomatic arch - no change at this time. Minimal inflammation present. Cleaned and treated topically.

Assessment

~

Plan

Radiographs taken of the D2 left front lesion with and with iohexol radioopaque dye inserted into the tracks with a small red rubber catheter (very difficult to get into the tracks due to amount of granulation tissue present). To send out for evaluation as there appears to be more bone density present then previous and want to confirm that.

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Local anesthetic with epinephrine injected into a nodule along the medial aspect of the large track to open it up. Removed with #10 scalpel blade. Minimal bleeding and nonpainful. There was a significant opening now to the track. Able to visualize the pedunculated mass within the lumen of the track. Topically applied the local anesthetic. Small amount of bleeding. Flushed all sites again with diluted chlorhexidine solution. Patted dry. Tissue placed in formalin for submission to University of Florida pathologist. Cryotherapy performed with metal (two freeze/thaw cycles) to the triangular tissue underneath the nail of D2. Two freeze/thaw cycles to the right front lesion performed today. Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion. Vet wrap placed and duct taped around the foot for a bandage. To keep on as long as possible but patient has only been allowing it to stay on 1-3 hours before she takes it off. When she gets it off, she can have outside access for a few hours.

To try to alternate between canker powder treatments only (no laying down) and Mohs paste application with bandaging.  
To switch the dermavet ointment application to the right zygomatic arch lesions have been switched over the vitamin A/D to help keep moist as there has been no inflammation to aid in closure of the lesions.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

RADIOGRAPHS

Onset Date

Sep 23, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Sep 23, 2021 00:00

Notes/Comments

Sample

Sample Detail		Sample Quality	
Collection Date/Time	Sep 23, 2021 00:00	Additional Characteristics	~
Sample Type	Tissue	Degraded	No
Anatomical Source/Tissue	Left front digit 2		
Additives/Preservatives	Formalin		
Collection Method	~		
Collected By	Erica Lipanovich		
Reason	~		
Exclude from reference intervals	No		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Sep 23, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

 Sep 23, 2021 00:00

Sample Type

 Tissue

Anatomical Source/Tissue

 Left front digit 2

Additives/Preservatives

 Formalin

Collection Method

 ~

Collected By

 Erica Lipanovich

Reason

 ~

Exclude from reference intervals

 No

Sample Quality

Additional Characteristics

 ~

Degraded

 No

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Sep 23, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

 Sep 23, 2021 00:00

Sample Type

 Tissue

Anatomical Source/Tissue

 Left front digit 2

Additives/Preservatives

 Formalin

Collection Method

 Sharp dissection / cut off a piece

Collected By

 Erica Lipanovich

Reason

 ~

Exclude from reference intervals

 No

Sample Quality

Additional Characteristics

 ~

Degraded

 No

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Sep 23, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Biopsy Detail

Submission

Date Submitted

Sep 23, 2021

Submitted By

Erica Lipanovich

Recent History/Observations Note

~

Sample Information

Sample ID/GSN

S-PGW21-005928

Sample Type

Tissue

Anatomical Source/Tissue

Left front digit 2

Biopsy Collection Date

Sep 23, 2021 00:00

Additives/Preservatives

Formalin

Collected By

Erica Lipanovich

Status

Available

Case Info

Pathology Case Number

~

Parties to get copy of final report

~

Responsible Pathologist

Erica Lipanovich

Responsible Resident

~

Workflow Notes and Additional Case Comments

~

Biopsy Preliminary Examination

Biopsy Info

Gross Examination By

~

Report Written Date

~

Biopsy Tissue/Description

~

Preliminary Diagnosis

Diagnoses

Diagnosis	Standardized Diagnosis
~	~

Initial Biopsy Comments & Interpretation

~

Samples & Tests

Samples

Sample Type/Anatomical Source	Preservative
Tissue/Left front digit 2	Formalin

Laboratory	Test Name	Result	Evaluation	Status
~	~	~	~	~

Histopathology

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Tissue Processing

Tissue Trim Date

Trimmed By

Tissue Processing Submission Date

Tissue Processed Completion Date

External Laboratory

Reference Number

~

~

~

~

University of Florida  
Veterinary Diagnostic  
Laboratories

440785

Histopathology Info

Histopathology Report Date

Histopathology Report By

Responsible Pathologist

Sep 30, 2021

Erica Lipanovich

Erica Lipanovich

Histopathology Report

HISTORY SUBMITTED BY CLINICIAN: Proliferative pododermatitis

FINAL ANATOMIC OR ETIOLOGIC DIAGNOSIS:

Pododermatitis, ulcerative, lymphohistiocytic, heterophilic, chronic active, locally 1. extensive, marked, skin

SAMPLE SUBMITTED: Proliferative pododermatitis lesion biopsy

GROSS DESCRIPTION: Received in a container of 10% neutral buffered formalin labeled with patient information for "Asian Elephant #5" and "D2 LF lesion" is a 2.6x1.7x1.0cm brown , firm, roughened, nodular, irregularly shaped tissue. Representative sections of the tissue are included in cassettes 1 and 2. No tissue remains in the container.

MICROSCOPIC DESCRIPTION:

SLIDES 1-2 Skin (4 sections)

In all sections, dermal collagen fibers are markedly infiltrated and separated by high numbers of macrophages, lymphocytes, plasma cells, and rare heterophils. Numerous small-caliber vessels perpendicular to dermal collagen fibers are present in the affected dermis and are surrounded by increased numbers of inflammatory infiltrates (dense granulation tissue). The epidermis is diffusely ulcerated in all sections. The ulcer bed is composed of necrotic eosinophilic debris, karyorrhectic debris, heterophils, extravasated erythrocytes, small-caliber vessels, and rare clusters of cocci. The ulcer bed and dermal inflammation extend to section borders.

Robert Ossiboff, DVM, PhD, Diplomate ACVP

lat:9/30/2021 Morgan Maisel, DVM, Resident

Diagnosis	Standardized Diagnosis
~	~

Finalize

Finalization Date

Responsible Pathologist

Responsible Resident

Sep 30, 2021

Erica Lipanovich

~

Final Summary

COMMENTS: The marked inflammation, necrosis, and ulceration in these sections is consistent with the clinical diagnosis of pododermatitis. Low numbers of cocci are identified in the submitted sections. There is no evidence of neoplasia in the examined sections.

Biopsy Case Info for Husbandry Staff (Husbandry Note)

~

Addendum		
Date	Note	Reported By
~	~	~

Audit Trail

Record locked by Erica Lipanovich on Sep 30, 2021 at 15:05

Sep 22, 2021

Clinical note			
Date	Time	Note	Author
Sep 22, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Keeper reports that it was very difficult to pack the canker powder into the track last night as there seems to be more tissue that had grown within a few hours.  
To reach out to multiple consultants as to best options for this.

Objective

Patient standing.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess is still very small and unable to palpate. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present inside around a loose pedunculated section of tissue. The tip is necrotic but the stalk appears intact. Minimal to no change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue with the remaining being a grey coloration and very moist.  
Right zygomatic arch - no change at this time. Minimal inflammation present. Cleaned and treated topically.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution gently and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Very difficult to get the catheter tip syringe into the opening and very reluctant to flush. Took multiple attempts.  
Cryotherapy performed with metal to the lateral of D3 left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2.  
Packed both lesions with canker powder including the track opening as much as possible without causing too much discomfort and the old abscess site on the left front.  
Given outside access for a few hours.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 21, 2021

Clinical note

Date	Time	Note Author
Sep 21, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.

Objective

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess is still very small and unable to palpate. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present inside around a loose pedunculated section of tissue. The tip is necrotic but the stalk appears intact. Minimal to no change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue with the remaining being a grey coloration and very moist.  
Right zygomatic arch - no change at this time. Minimal inflammation present. Cleaned and treated topically.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the lateral of the D3 left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2.  
Flushed the pad to skin section between D1/D2 and the pad to pad loose section with betadine (10%) to help dry it and packed the skin to pad lesion with canker powder as best as could.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.  
Vet wrap placed and duct taped around the foot for a bandage. To keep on as long as possible but patient has only been allowing it to stay on 1-3 hours before she takes it off. If she gets it off, she can have outside access for a few hours.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 20, 2021

Clinical note

Date	Time	Note Author
Sep 20, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Recheck.  
Keeper reports that the last two days she has been eating her normal amount of food again, and this patient remains in a good mood. Seems to be moving around well (her normal ambulation). Med compliance is still good at this time as well.

**Objective**

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess is still very small and unable to palpate. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present inside around a loose pedunculated section of tissue. The tip is necrotic but the stalk appears intact. Minimal to no change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue with the remaining being a grey coloration and very moist.  
OS - there is still a very small amount of clear ocular discharge. Both eyelids are not swollen. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - no change at this time. Minimal inflammation present.

**Assessment**

~

**Plan**

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles), lateral edge of D3/D2 and to the triangular tissue underneath the nail of D2.  
Some of the necrotic tissue trimmed around the ventral abscess site with a #10 scalpel blade.  
Flushed the pad to skin section between D1/D2 and the pad to pad loose section with betadine (10%) to help dry it and packed the skin to pad lesion with canker powder as best as could.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front. She can have outside access for a few hours.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 19, 2021

Clinical note

Date	Time	Note Author
Sep 19, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Recheck.  
Keeper reports that the last two days she has been eating her normal amount of food again, and this patient remains in a good mood. Seems to be moving around well (her normal ambulation). Med compliance is still good at this time as well.

Patient in lateral recumbency.

Objective

Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess is still very small and unable to palpate. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present inside around a loose pedunculated section of tissue. The tip is necrotic but the stalk appears intact. Minimal to no change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue with the remaining being a grey coloration and very moist.  
OS - there is still a very small amount of clear ocular discharge. Both eyelids are not swollen. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - no change at this time. Minimal inflammation present.

Assessment

~

Plan

Discontinued the topical ophthalmic ointment but applied the dermavet to the zygomatic skin lesions after cleaning.  
Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2.  
Some of the necrotic tissue trimmed around the ventral abscess site with a #10 scalpel blade.  
Flushed the pad to skin section between D1/D2 and the pad to pad loose section with betadine (10%) to help dry it and packed the skin to pad lesion with canker powder as best as could.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.  
Vet wrap placed and duct taped around the foot for a bandage. To keep on as long as possible but patient has only been allowing it to stay on 1-3 hours before she takes it off. If she gets it off, she can have outside access for a few hours.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 18, 2021

Clinical note

Date	Time	Note Author
Sep 18, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.  
Elected to give this patient a break today - only to do canker powder today three times daily to both front feet lesions for topical treatments. Still discontinuing the tramadol as patient seems to be maintaining well with the ibuprofen and gabapentin for now.  
Appetite seems to be up from a few days ago.  
E Lipanovich, DVM

Objective

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Assessment

~

Plan

~

Animal Care Staff Medical Summary

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 17, 2021

Clinical note

Date	Time	Note	Author
Sep 17, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	
		<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

**Subjective**

Recheck.  
Keeper reports that appetite is still a little low but better. There is no indications of colic at this time. Med compliance is still good at this time as well.

**Objective**

Patient no longer appears bloated at this time. MM are moist and pink.  
Patient in lateral recumbency.  
Right front, D5 - the lateral aspect of the cuticle is loose around the nail and separating, but the middle section is growing new nail.  
Left front, D2/D3 - the opening on the abscess is very small (about 0.4 cm). The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present. There is a thin layer of dry tan layer of tissue over the dorsal 1/3rd of the lesion. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass - no change. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue - no change from yesterday. Minimal change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue and moist grey coloration to the remaining of the lesion. New white crabmeat proliferative tissue present along the lesion and D3 (about 4 mm by 1 mm).  
The lesion is approximately 8.5 cm wide and 12 cm in height. The dorsal section has 2 cm approximately of new skin growth and wraps around to the entire area over D3. The medial area of D2 still has 3.5 cm of new skin growing with some dried brown debris over the top . The D2 nail is attached and appears to be growing (filed the outer aspect smooth). The ventral lesion is 8 cm by 8.5 cm. The white cauliflower like swirling tissue still rims the border between the white tissue and the pink ventral tissue.  
OS - there is still a very small amount of clear ocular discharge. Both eyelids are not swollen. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - no changes to these lesions and minimal inflammation present.

**Assessment**

~

**Plan**

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Local anesthetic with epinephrine injected into a nodule along the medial aspect of the large track. Removed with #10 scalpel blade. Minimal bleeding and nonpainful. There was a significant opening now to the track. Able to visualize the pedunculated mass within the lumen of the track. Removed some of the necrotic ends of the mass with the scalpel blade. The black dried necrotic tissue that was loose around the previous abscess site was removed gently. Some of the black hard debris was removed as well that was firmly attached along the upper right quadrant of the ventral lesion. Moderate amount of bleeding. Topically applied the local anesthetic. Bleeding stopped. Flushed all sites again with diluted chlorhexidine solution. Patted dry.  
Small amount of necrotic tissue removed from D5 on the right front. Filed the nail back some.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2. Two freeze/thaw cycles to the right front lesion performed today.  
Some of the necrotic tissue trimmed around the left front lesion (lateral white cauliflower like section and the crabmeat like tissue along the ventral edges of D2 with a #10 scalpel blade.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front.

To try to alternate between canker powder treatments only (no laying down) and Mohs paste application with bandaging.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Sep 16, 2021

Start Date

Sep 17, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 16, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Dermavet Ointment (2.5 mg/ml Semisolid > Ointment) (Neomycin Sulfate; Nystatin; Thiostrepton; Triamcinolone)

Dose Amount

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Dosage Amount

~

Administrated Dose Quantity

~

Frequency

twice a day (bid)

Duration

10days

Delivery Route

Topical

Loading Dose

~

Form of Drug

Ointment

Concentration Of Drug

2.5 mg/ml

Treatment Response

Clinical Response

~

Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Apply to affected skin lesions twice daily after cleaning.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
Sep 26, 2021	5 / Asian elephant / MIG12-29545888 Dermavet Ointment treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 21, 2021 00:00	Michael Weaver	Complete	switched to A&D
Sep 20, 2021 00:00	Shara Crook	Complete	~
Sep 19, 2021 00:00	Michael Weaver	Complete	no dose given 18 Sep
Sep 17, 2021 00:00	Michael Weaver	Complete	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Sep 16, 2021

Start Date

Sep 17, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 16, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Dosage Amount

1.2 mg/kg

Administrated Dose Quantity

4.029 count

Frequency

once a day (sid)

Duration

7doses

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

800 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Sep 23, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 28, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 27, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 26, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 25, 2021 00:00	Michael Weaver	Complete	~
Sep 24, 2021 00:00	Michael Weaver	Complete	~
Sep 23, 2021 00:00	Michael Weaver	Complete	~
Sep 22, 2021 00:00	Michael Weaver	Complete	~
Sep 21, 2021 00:00	Michael Weaver	Complete	~
Sep 20, 2021 00:00	Kathryn Harding	Complete	~
Sep 19, 2021 00:00	Kathryn Harding	Complete	~
Sep 18, 2021 00:00	Joseph Golden	Complete	~
Sep 17, 2021 00:00	Joseph Golden	Complete	~

Sep 16, 2021

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date	Time	Note Author
Sep 16, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Patient seems to be having some mild colic issues - not interested in eating alot of her favorite food items.

Objective

Patient seems bloated and uncomfortable this morning. Moving slower than usual.  
Tongue seems tacky but MM are < 2 CRT. Observed patient urinate a large amount of normal urine.  
Patient in lateral recumbency for foot evaluation.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.5 cm) and unable to palpate the interior. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a moist grey, fragile layer of tissue that bleeds easily when touched. There is section where the black hard debris was from yesterday is red, fragile tissue that is very sensitive to the touch and bleeds easily. (fell off yesterday?) There is also a few places that appear very raw along the lateral aspect around the crabmeat like tissue from yesterday.  
OS - there is still a mild amount of clear ocular discharge. Both eyelids are not swollen today. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. The tissue beds appear more raw today then previous. Approximately 1 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. The raw area on the ventral aspect of the foot was very very gently cleaned. Patted dry.  
Cryotherapy performed with metal to the middle of the left front lesion and to the triangular tissue underneath the nail of D2 (three freeze/thaw cycles) and two freeze/thaw cycles to the right front lesion.  
Packed both front feet lesions with canker powder including the track and the old abscess site on the left front. Washed an excess powder off the ventral aspect of the lesion.  
Mohs paste applied. Abdominal pad applied. Bandaged to body. No outside access today.  
No tramadol today and strongly recommend some mineral oil and extra water/fluids to be encouraged throughout the day. To offer wide variety of food items including browse.  
To monitor closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 15, 2021

Clinical note

Date	Time	Note Author
Sep 15, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.  
Patient was very agitated today.

Objective

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.5 cm) and unable to palpate any longer. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a moist grey, fragile layer of tissue that bleeds easily when touched. There is also a layer of hard black dried debris present over about 1/3rd of this ventral granulation tissue bed that is firmly attached.  
OS - there is still a mild amount of clear ocular discharge. Both eyelids are not swollen today. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. Approximately 1 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Removed some necrotic tissue and crabmeat like proliferative tissue in the central lateral aspect of the lesion with a #10 scalpel blade. Tried to check if there was any fluid behind the hard, black debris - none but there was some highly vascular tissue. Didn't trim on it as concerned it would cause discomfort.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2.  
Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade only around the rim of the pad.  
Packed both front feet lesions with canker powder including the track and the old abscess site on the left front. No bandaging as patient was not tolerant today. Keepers to re-apply two more times and patient may have some outside access today for a few hours.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Sep 14, 2021  
**Start Date** Sep 15, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Terminated On** Sep 16, 2021  
**Termination Reason** Adverse effect(s)  
**Doses Given** 1  
**Termination Note** decreased appetite  
**Reason For Treatment** Medical

Weight Info

**Date** Sep 14, 2021  
**Measurement Value** 2,686 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Dosage Amount

1 mg/kg

Administrated Dose Quantity

53.72 count

Frequency

once a day (sid)

Duration

5days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

50 mg

Treatment Response

Clinical Response

~

Adverse Effects

Minor

Adverse Effects Note:

~

Staff Instructions

Give 53 tablets orally once daily for five days. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Dispensing Records

Administration Records

Prescription/Treatment

Basic Info

Date Written

Sep 14, 2021

Start Date

Sep 15, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 14, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40,890 mg

Dosage Amount

15.223 mg/kg

Administrated Dose Quantity

40,890 mg

Frequency

once a day (sid)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally every day for 14 doses. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

40.9 gm

Calendar Items

Dispensing Records

Administration Records

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Sep 14, 2021

Start Date

Sep 15, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 14, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

20,445 mg

Dosage Amount

7.6 mg/kg

Administrated Dose Quantity

20,445 mg

Frequency

once a day (sid)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

Semisolid

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3 scoops dissolved completely in water rectally every day for 14 doses. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Sep 28, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 28, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 27, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 26, 2021 00:00	Kathryn Harding	Complete	~
Sep 25, 2021 00:00	Michael Weaver	Complete	~
Sep 24, 2021 00:00	Michael Weaver	Complete	~
Sep 23, 2021 00:00	Michael Weaver	Complete	~
Sep 22, 2021 00:00	Michael Weaver	Complete	~
Sep 21, 2021 00:00	Michael Weaver	Complete	~
Sep 20, 2021 00:00	Kathryn Harding	Complete	~
Sep 19, 2021 00:00	Kathryn Harding	Complete	~
Sep 18, 2021 00:00	Joseph Golden	Complete	~
Sep 17, 2021 00:00	Joseph Golden	Complete	~
Sep 16, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 15, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sep 14, 2021

Clinical note

Date	Time	Note Author
Sep 14, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Recheck.  
Keeper reports that it has been four days and this patient remains in a good mood. Seems to be moving around with less pain per keepers. Med compliance is still good at this time as well.

**Objective**

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.5 cm) with a thick white capsule of fibrotic tissue inside the opening and necrotic black tissue around the openning. Palpation within the abscess shows very nodular tissue within and a very very small chamber. Appears more granulation tissue has developed overnight within the previous abscess. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion. The ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue.  
OS - there is still a mmild amount of clear ocular discharge. Both eyelids seem mildly swollen, like she is rubbing it. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. Approximately 1 mm of new skin and tissue growth along the rims to all lesions seen.

**Assessment**

~

**Plan**

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles) and to the triangular tissue underneath the nail of D2. Two freeze/thaw cycles to the right front lesion performed today.  
Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade. A local anesthetic (1 ml lidocaine, 3 ml bupivacaine, 0.5 ml epinephrine, 0.5 ml sodium bicarbonate, 1 ml sterile water with a 22 gauge, 1.5 inch needle) was used to two raised nodules to remove surgically with #10 scalpel blade. One nodule was to the medial opening of the track and one was the raised nodule adjacent to the track (previous biopsy site). Mild bleeding despite epinephrine injected into site to assist in hemostasis. Scrubbed gently with diluted chlorhexidine. Patted dry.  
Trimmed some of the nail of D2 by filing it back. Trimmed a small amount of pad to allow better visual - there is separation now between the skin and new pad as well as new pad and old pad. Flushed this site with betadine (10%) to help dry it and packed the skin to pad lesion with canker powder as best as could.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.  
Vet wrap placed and duct taped around the foot for a bandage.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 13, 2021

Clinical note

Date	Time	Note Author
Sep 13, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Recheck.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Requested blood collection from patient at some point this week.

Objective

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.5 cm) with a thick white capsule of fibrotic tissue inside the opening and necrotic black tissue around the opening. Palpation within the abscess shows very nodular tissue within and a very very small chamber. Appears more granulation tissue has developed overnight within the previous abscess. The track branch that connects to it is very small and unable to communicate manually to the abscess site. Small amount of purulent debris is still within the tracks but large amount of necrotic tissue is present. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Peeled back some of it - new skin is growing underneath it. No bleeding and about half of it peeled off with firm pressure. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion. Then ventral pink/purple granulation tissue is covered in a hard black necrotic section of tissue.  
OS - there is still a moderate amount of clear ocular discharge. Both eyelids seem swollen, like she is rubbing it. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. Approximately 1 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the middle of the left front lesion (two freeze/thaw cycles) and three freeze/thaw cycles to the triangular tissue underneath the nail of D2.  
Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade. Trimmed the top layer of tan, hard, dry tissue/debris over the white crabmeat like tissue. This section seems very shallow in tissue and suspect it is mostly the pink granulation tissue underneath. Almost appears as if the white crabmeat like tissue is being shrunken in several places very very slowly. The black hard tissue was trimmed off as well with a scalpel blade - a large pocket of bloody fluid was found underneath it. Removed approximately 4 mm of necrotic tissue from under where the Mohs paste had been applied. Scrubbed gently with diluted chlorhexidine. Patted dry.  
Trimmed some of the pad between D1 and D2 as well as around the loosely attached nail of D2.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.  
Vet wrap placed and duct taped around the foot for a bandage.  
Patient left the bandage on for 2 hours after treatment was complete. Keepers packed with canker powder two more times throughout day. Patient was given outside access for a few hours in middle of day.  
E Lipanovich, DVM

Addendum: Spoke with consultant regarding the CO2 therapy. Recommended continue the CO2 therapy as it has been 3 weeks from three times weekly to twice weekly. More cartridges will be sent and should arrive later this week.

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sep 12, 2021

Clinical note

Date

Sep 12, 2021

Significant

No

Subjective

Recheck.

Objective

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.75 cm) with a thick white capsule of fibrotic tissue inside the opening and necrotic black tissue around the opening. Palpation within the abscess shows very nodular tissue within and a very very small chamber. Appears more granulation tissue has developed overnight within the previous abscess. The track branch that connects to it is very small and unable to communicate manually the abscess site. Lots of purulent debris is still within the tracks. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Peeled back some of it - new skin is growing underneath it. No bleeding and about half of it peeled off with firm pressure. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion.  
OS - there is still a moderate amount of clear ocular discharge. Both eyelids seem swollen, like she is rubbing it. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. Approximately 2 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Private

No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Plan

Ophthalmic drops applied.

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.

Cryotherapy performed with metal to the middle of the left front lesion (three freeze/thaw cycles) and two freeze/thaw cycles to the right front.

Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade.

Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thick smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.

Vet wrap placed and duct taped around the foot for a bandage.

Patient left the bandage on for 2 hours after treatment was complete. Keepers packed with canker powder two more times throughout day. CO2 therapy today in afternoon.

Patient was given outside access for a few hours in middle of day.

Concerned as keeper staff have noticed that this patient has had a steady weight loss the last few weeks. Concerned that it could be related to medications.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 11, 2021

Clinical note

Date	Time	Note Author
Sep 11, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.

Objective

Patient in lateral recumbency.

Right front, D5 - no change.

Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 0.75 cm) with a thick white capsule of fibrotic tissue inside the opening and necrotic black tissue around the opening. Palpation within the abscess shows very nodular tissue within and a very very small chamber. Appears more granulation tissue has developed overnight within the previous abscess. The track branch that connects to it is very small and unable to communicate manually the abscess site. Lots of purulent debris is still within the tracks. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Peeled back some of it - new skin is growing underneath it. No bleeding and about half of it peeled off with firm pressure. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion.

OS - there is still a moderate amount of clear ocular discharge. Both eyelids seem swollen, like she is rubbing it. Cornea and conjunctiva remain normal in appearance.

Right zygomatic arch - lesions continue to slowly fill it. Approximately 2 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.

Cryotherapy performed with metal to the middle of the left front lesion (three freeze/thaw cycles).

Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade.

Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the lateral aspect of the left front and then wiped any off the ventral pink granulation tissue. Mohs paste applied in thin smear to the ventral pink tissue. A small abdominal nonstick pad was placed of the lesion.

Vet wrap placed and duct taped around the foot for a bandage.

Patient left the bandage on all day after treatment was complete. Keepers removed the bandage at the end of day as concerns patient would remove bandage and ingest it overnight. Keepers packed with canker powder at end of day.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 10, 2021

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date	Time	Note Author
Sep 10, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.

Objective

Patient in lateral recumbency.  
Right front, D5 - no change.  
Left front, D2/D3 - the opening on the abscess from yesterday is very small (about 1 cm) with a thick white capsule of fibrotic tissue inside the opening and necrotic black tissue around the opening. Palpation within the abscess shows very nodular tissue within and a very very small chamber. Appears more granulation tissue has developed overnight within the previous abscess. The track branch that connects to it is very small and unable to communicate manually the abscess site. Lots of purulent debris is still within the tracks. There is a thin layer of semimoist tan layer of tissue over the dorsal 1/3rd of the lesion. Peeled back some of it - new skin is growing underneath it. No bleeding and about half of it peeled off with firm pressure. Nonpainful. There is white proliferative crabmeat like tissue in the central portion of the lateral aspect of the mass. There is some dried tan papillae like tissue along the ventral rim of the margin of white/pink granulation tissue. Minimal change in size and shape to this lesion.  
OS - there is still a moderate amount of clear ocular discharge. Both eyelids seem swollen, like she is rubbing it. Cornea and conjunctiva remain normal in appearance.  
Right zygomatic arch - lesions continue to slowly fill it. Approximately 2 mm of new skin and tissue growth along the rims to all lesions seen.

Assessment

~

Plan

Scrubbed the lesions with diluted chlorhexidine solution and flushed all tracks and the previous abscess site with a 60 ml syringe and solution. Patted dry.  
Cryotherapy performed with metal to the right front (two freeze/thaw cycles) and to the middle of the left front lesion (three freeze/thaw cycles).  
Some of the necrotis tissue trimmed around the ventral abscess site with a #10 scalpel blade.  
Packed both lesions with canker powder including the track and the old abscess site on the left front. Thick amount of canker powder applied to the left foot lesion. A small abdominal nonstick pad was placed of the lesion. Vet wrap placed and duct taped around the foot for a bandage.  
Patient left the bandage on for about 2.5 hours after treatment was complete. Keepers packed with canker powder two more times throughout the day.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

<div>Basic Info</div> <div><div>Date Written</div>Sep 10, 2021<div>Start Date</div>Sep 10, 2021 00:00<div>Prescribed By</div>Erica Lipanovich<div>Prescribed For</div>1 animal<div>Reason For Treatment</div>Medical</div>	<div>Weight Info</div> <div><div>Date</div>Sep 10, 2021<div>Measurement Value</div>2,686 kg<div>Estimate</div>Yes<div>Exclude From Reference Intervals</div>Yes</div>
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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Neomycin + Polymixin B + Gramicidin Ophthalmic (1.775 mg/ml Liquid > Solution) (Gramicidin; Neomycin Sulfate; Polymyxin B)

Dose Amount

6 drops

Frequency

once a day (sid)

Form of Drug

Solution

Dosage Amount

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Duration

7days

Concentration Of Drug

1.775 mg/ml

Administrated Dose Quantity

6 drops

Delivery Route

Topical, ophthalmic

Loading Dose

~

Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Apply 5-6 drops to the right eye once to twice daily for 7 days.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
Sep 16, 2021	5 / Asian elephant / MIG12-29545888 Neomycin + Polymixin B + Gramicidin Ophthalmic treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 17, 2021 00:00	Erica Lipanovich	Complete	~
Sep 16, 2021 00:00	Erica Lipanovich	Complete	~
Sep 15, 2021 00:00	Erica Lipanovich	Complete	~
Sep 14, 2021 00:00	Erica Lipanovich	Complete	~
Sep 13, 2021 00:00	Shara Crook	Complete	d/c per EWL
Sep 12, 2021 00:00	Shara Crook	Complete	~
Sep 11, 2021 00:00	Shara Crook	Complete	~
Sep 10, 2021 00:00	Shara Crook	Complete	~

Sep 09, 2021

Clinical note

Date

Sep 09, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck.

Objective

Patient in lateral recumbency.  
Left front D2/D3 - the ventral pink granulation tissue shows signs of where it has been rubbed on the ground as it has a roughened appearance along the slipper margin as it is still growing. There is a dark grey coloration present to some of this tissue. The tan material along the dorsal 1/3rd of the lateral aspect of D2/D3 is very dry. Can see some hairs trying to grow out of this area. The middle has a 4-5 cm section of white proliferative crabmeat like tissue that is very squishy on palpation and nonpainful. The medial area

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

adjacent to the D2 nail edge still has some white to pink necrotic, moist tissue along the new pad that is growing. The ventral aspect of the pink granulation tissue has a thin coating of grey to black tissue from the Mohs paste however can still see where a 2 cm section (circular) has been rubbed on the ground as she walks as it is very rough in appearance. The track opening has a moderate amount of purulent debris present. Palpation to the lateral branch of the track is normal. Palpation to the medial branch of the track shows that it has extended and curled towards the lateral margin of the growth. Unable to touch where it ends. Large amount of malodorous purulent debris present when pressing on the outside of the growth adjacent to lateral nail edge within the pink granulation tissue. Able to feel where there is a thin wall present along the ventrolateral edge of the pink granulation/white crabmeat like tissue margin. The white proliferative crabmeat like tissue under the nail is triangle in shape and pushing the pink granulation tissue more lateral towards D3. This tissue has increased in size by about 5 mm.

Right front D5 - no change

Right zygomatic - still present but slowly filling in with dermavet ointment. Caked with sand in the lesions.

Right eye - moderate clear discharge still present but cornea is clear. Still has a lot of sand present around the periorbital region.

Assessment

left front D2/D3 - new abscess within the medial branch of the track within the pink granulation tissue.

Left front D2/D3 - new skin growth present along the dorsal 1/3rd of the lesion (approximately 5 cm from the normal skin margin)

right front D5 - stable

Plan

Last day of topical antibiotic therapy to OS - to reevaluate tomorrow as may continue it. Washed the periorbital region to remove excess sand. Applied topical solution. Scrubbed the right zygomatic arch gently with diluted chlorhexidine solution - definitely new granulation tissue present and slowly filling in at the skin margins as well. Applied dermavet after patting dry.

Scrubbed both front feet lesions gently but firmly with diluted chlorhexidine solution.

Patted dry.

Canker powder applied to the right front lesion.

Left front - Using a #10 scalpel blade, gently peeled the tan crusty debris off the dorsal edge to make sure it is new skin growing. Confirmed. No cryotherapy performed to this area. Removed some of the white crabmeat like tissue in the middle 4-5 cm section (removed about 2 mm of tissue to see some more vascular tissue). Removed some of the loose tan to black necrotic tissue along the lateral white crabmeat like tissue margin (swirls seen underneath of vascular tissue). Cryotherapy performed with metal three times to the middle of the lesion with the white crabmeat like tissue, the triangle of tissue along the ventral portion of the lesion and the medial area adjacent to the medial nail. Gently trimmed this area also with #10 scalpel blade - can see what appears to be new cuticle trying to grow. Only shaved this area to remove the top dead layers.

Located the thin wall of the abscess along the ventral pink/white granulation tissue margin (adjacent to the medial nail). Scrubbed vigorously with chlorhexidine solution again.

Lanced quickly with a #10 scalpel blade - no response but actively bleeding a small amount. Able to remove approximately 2 cm of the thin wall of the granulation tissue so that the abscess was open. The purulent debris was manually removed. Can feel multiple nodules present within this opening. Moderately painful. Applied thick coating of canker powder within the abscess and all tracks as well as the entire outside area of the lesion. A large telfa pad applied to the ventral and lateral edge of the mass. Vetwrap placed around the foot and then duct tape applied to help secure in place.

When patient came up, she immediately tried to take it off repeatedly. Elected to see if could distract her with browse, enrichment items, and toys. Patient kept the bandage on for about 3.5 hours before she ripped it off.

To attempt to bandage again tomorrow after assessment to see if can get her to leave it on longer.

To continue to monitor for any indications of pain or changes.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Sep 09, 2021	Date	Sep 09, 2021
Start Date	Sep 09, 2021 00:00	Measurement Value	2,686 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Dosage Amount

1 mg/kg

Administrated Dose Quantity

53.72 count

Frequency

once a day (sid)

Duration

5days

Delivery Route

Oral (p.o.)

Loading Dose

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Form of Drug

Tablet

Concentration Of Drug

50 mg

Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 53 tablets orally once daily for five days. Monitor for sedation.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Kathryn Harding	Complete	~

Prescription/Treatment

Basic Info

Date Written

Sep 09, 2021

Start Date

Sep 09, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 09, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

7doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Administer 3.5 tablets crushed and dissolved in water rectally once daily for 7 days.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
Sep 15, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 16, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 15, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Michael Weaver	Complete	~

Sep 08, 2021

Clinical note

Date

Sep 08, 2021

Significant

No

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy.

Patient to be given outside access today post cryotherapy treatment for several hours with Emily. Keepers are going to try to confine a lot of enrichment and food items to an area close to the barn so that she can be encouraged to stay quiet on the foot.

Objective

Patient in lateral recumbency.

Left front D2/D3 lesion - the entire dorsal aspect of the lesion has a thin layer of crusty yellow to tan dried debris over 1/3rd of the lesion. There is several areas of loose skin along the edges that appears nonviable. The middle aspect of the lesion seems more sloped so suspect the pink granulation tissue has increased in size internally. The ventral pink granulation tissue where the Mohs paste was applied is hard, dry and black in coloration. Trimmed very very shallow to see the amount of penetration - about 1 mm in depth

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

only. Suspect that because it wasn't protected, that it was rubbed off as she walked around on the sand. The tracks are the same at this time. The medial area adjacent to the D2 nail edge has some white to pink necrotic, moist tissue along the new pad that is growing.

Right front D5 - long tan papillae material that is necrotic is present and loose. No other changes

Right zygomatic arches - lesions are less inflamed and have some new pink granulation tissue (smoother and pinker). Less sensitive to the touch and no discharge.

OD - moderate amount of clear ocular discharge. Eye is completely open and there is no change to the cornea at this time. Conjunctiva is mildly inflamed still. Third eyelid is in normal position.

Assessment

right eye - improved

proliferative pododermatitis - no change

Plan

Scrubbed the lesions and tracks gently with diluted chlorhexidine solution. Patted dry.

Three freeze/thaw cycles of cryotherapy with metal were performed to the left front lesion and two to the right front lesion.

Trimmed the right front lesion with a #10 scalpel blade - just the brown necrotic tissue was trimmed. No other tissue trimmed. Canker powder packed into the lesion.

On the front leg lesion - Mohs paste was applied to the ventral pink granulation tissue only. Canker powder packed into the tracks and the lateral aspect of the lesion.

Keepers were instructed to apply canker powder as previously directed to the tracks and the lateral aspects of the lesion only. Mohs paste was reapplied at the end of the day to the pink tissue only (instructed to wear gloves when handling).

Given outside access with Emily for several hours midday. Came in no problems.

Updated consultants on current status of lesions.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
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Sep 07, 2021

Clinical note

Date	Time	Note	Author
Sep 07, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	
		<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Treatment.

Objective

Patient in lateral recumbency.

Ocular discharge was minimally present in the right eye. There is minimal conjunctival swelling present. The third eyelid was still up a little but no blepharospasms noted to the right eye.

Left front D2/D3 - the skin/pad margin seems to be separating around the medial nail edge. There is some soft pink crabmeat to necrotic like tissue present. Very moist. The lesion extends 5 cm wide and extends 6 cm. It is 14 cm in length and 23 cm wide total. The dorsal 1/3rd is still dry and seems to be flush with the surrounding skin edge. There appears to be some grey mottling appearing over this area extending from D3 and wrapping to the dorsal middle of D2. Minimal crab meat like tissue present. The front of the lesion is very raised, roughened and has significant crevices within the tissue. The dorsal aspect of the lesion over D3 is 8.5 cm in length and 10.5 cm in width. This remains dry and flush with the rest of the foot. The ventral pink/purple granulation tissue is very well vascularized and bleeds easily. It is approximately 7.5 cm wide by 4 cm in length. Very cauliflower in appearance. There is a 2 cm circular section that appears to be growing ventrally and has had significant contact with the ground. Unable to palpate the semicircular section under the pad again. Can palpate 1 cm along the entire ventral pad and along the lateral D3 lesion. The track in the middle has two main channels - one lateral and one medial. There is still a 1 cm loose nodule that is still firmly attached to the caudal aspect of the foot/growth.

Right front D5 - The lateral aspect of the lesion is 9.5 cm in width and 4 cm in length. The tissue is dry, brown in coloration and papillae like. The ventral aspect of it measures 9 cm by 4.5 cm. There is still a 1 cm track under the lateral edge of the remaining nail. The small piece of nail that is left has two open areas of cuticle that is missing. The lesion is very dry and minimally painful at this time.

Zygomatic arch lesions (right) - no significant change from yesterday.

Assessment

OD inflammation - decreased significantly

Plan

The loose skin edges were removed with a #10 scalpel blade with no pain or bleeding noted. The lesions appear the same as yesterday.

Cryotherapy performed to the lateral 2/3rd of the lesion (middle) and the triangular tissue underneath the nail that is visible on the ventral portion next to the pad - two freeze/thaw cycles performed with metal. Canker powder applied to the D5 lesion and D2 - D3 lateral aspect of the lesion. Mohs paste applied to the lateral half of the ventral pink/purple pedunculated tissue. Canker powder applied within the tracks of the lesion (mild amount of bleeding occurred) and surrounding margins. The remained medial half of the pink/purple pedunculated tissue was applied with canker powder only.

Patient will be given the choice of outside access to the old yard for a few hours tomorrow. There is a chance that this pink granulation tissue is still growing and could cause lameness to occur again if she ambulates too much. To monitor very closely.

Keeper reports that CO2 therapy is still occurring at 3 times weekly for 20-30 minutes. Patient doing really well and is still separate by many hours from the cryotherapy.

Updated consultants on patient.

E Lipanovich, DVM

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 06, 2021

Clinical note

Date	Time	Note	Author
Sep 06, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	
		<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Cryotherapy.  
Two freeze/thaw cycles performed today in lateral recumbency to the LF D2/D3 lesion - ventral 2/3rd. Canker powder coated and packed into the tracks.  
One freeze/thaw cycle performed today on the RF D5 lesion. Canker powder coated and packed into tracks.  
The right zygomatic arch wounds are the same size and depth. Skin edges that are present and frayed - need to be trimmed. Gently scrubbed with diluted chlorhexidine, patted dry and applied thin coat of Dermavet.  
Still has moderate OD ocular discharge. There is some mild conjunctival inflammation still and the third eyelid is still present over 1/3rd of the cornea.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sep 05, 2021

Clinical note

Date	Time	Note	Author
Sep 05, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2	
		<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Recheck.  
Keeper reports that medicine and treatment compliance has been excellent.  
This patient is putting more weight on the front left, but it is still not receiving full weight bearing yet.  
The right eye is mild to moderately swollen with copious amounts of clear to foamy discharge. Keeping the eye closed a lot.

Objective

Patient in lateral recumbency.  
The left zygomatic arch has become severely abraded over the last few days - approximately 8 oval to pentagon shaped, full thickness abrasions with some underlying soft tissue missing as well along the the entire right zyogmatic arch. There are pieces of loose skin attached to some of the lesions. All are moderately inflamed and caked with wet sand.  
The left front D2/D3 lesion - the lesion is completely dry except at the ventral pink/purple pedunculated tissue. The entire lateral face of the lesion is dry with no white proliferative crabmeat like tissue visible. The dorsal 1/3rd is flush with the surrounding skin and tissue. There is some peeling of skin that is no longer viable around the entire lesion. The lesion has decreased in size along the dorsum and has not increased in size to the ventral half. There is more white crabmeat like tissue visible under the nail along the pink/purple tissue and along the lateral edge of D3. The semicircular lesion under the pad was not readily palpable. The pad is no longer attached at the nail of D2 but there

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

appears to be new pad tissue growing that is visible between D1-D2 that it is attached to. Moderately uncomfortable when this is palpated. There is a small amount of necrotic tissue along the border of the pink/purple tissue and the former white crabmeat like tissue. The track within the pink/purple pedunculated tissue seems larger in diameter (decrease in mass size?) and can feel where it goes medial and lateral of what seems to be around P2. No odor when palpated the tracks. Pink/purple pedunculated tissue appears roughly the same size and shape as last week. There is still a 1 by 2 cm loose section of tissue within the middle that is firmly attached.

The right front D5 lesion is the same size and slightly less depth along the pad margin (about 5 mm). Dry.

The right eye - Severe blepharospasms. Third eyelid is covering about 2/3rd of the eye when is open. The central corneal scar is the same size and shape as previously noted. PLR is normal. Lots of sand around the eyelids. No visible scratch or corneal roughening seen. Discharge is clear to foamy in appearance. Conjunctiva is moderately swollen and red.

Assessment

zygomatic arch lesions - mechanical cause from rubbing patient's head on the sand when laying down.  
LF D2/D3 - decreased in size.  
RF D5 - same size.  
OD - foreign body irritation.

Plan

Proparacaine anesthetic was applied to the right eye and allowed to sit for 5 minutes. Flushed the eye with 1 liter of warm saline solution. Lots of sand and a hay piece washed out of the eye. The third eye lid retracted back almost fully at that time. Corneal staining was negative for uptake. Applied first topical ophthalmic meds.

Cleaned both lesions with diluted chlorhexidine solution, palpated all tracks and along the pads and patted dry. Small amount of trimming done to the lateral edge of tissue with a #10 scalpel blade. Can see that it is highly vascular underneath so did not trim much. Necrotic tips removed to the dry bed of tissue only.

Left front D2/D3 lesion - Cryotherapy to the dorsal 2/3rd of the lesion as it seemed painful to the dorsal 1/3rd of the lesion - metal; two freeze/thaw cycles performed today.

right front D5 lesion - cryotherapy - metal; one freeze/thaw cycle performed today.

Both lesions were impacted with the canker powder.

RX: Keterolac ophthalmic solution - apply 2-3 drops to the right eye SID-BID for 3 days.  
RX: NPB ophthalmic solution - apply 5-6 drops to the right eye SID-BID for 5 days.  
RX: Dermavet topical ointment - apply to the right zygomatic arch skin lesions twice daily after cleaning for 10 days.

Patient came over after standing happy and rumbling with the eye mostly open.

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Sep 05, 2021  
**Start Date** Sep 05, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Sep 05, 2021  
**Measurement Value** 2,686 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Ketorolac tromethamine 0.5% ophthalmic (5 mg/ml Liquid > Solution) (Ketorolac)

Dose Amount

3 drops

Frequency

once a day (sid)

Form of Drug

Solution

Dosage Amount

0.001 mg/kg

Duration

3days

Concentration Of Drug

5 mg/ml

Administrated Dose Quantity

3 ml

Delivery Route

Topical, ophthalmic

Loading Dose

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Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Apply 2-3 drops to the right eye once to twice daily for 3 days.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 07, 2021 00:00	Shara Crook	Complete	~
Sep 06, 2021 00:00	Shara Crook	Complete	~
Sep 05, 2021 00:00	Erica Lipanovich	Complete	~

Prescription/Treatment

Basic Info

Date Written

Sep 05, 2021

Start Date

Sep 05, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 05, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Dermavet Ointment (2.5 mg/ml Semisolid > Ointment) (Neomycin Sulfate; Nystatin; Thiostrepton; Triamcinolone)

Dose Amount

~

Frequency

twice a day (bid)

Form of Drug

Ointment

Dosage Amount

~

Duration

10days

Concentration Of Drug

2.5 mg/ml

Administrated Dose Quantity

~

Delivery Route

Topical

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Apply to affected skin lesions twice daily after cleaning.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
Sep 14, 2021	5 / Asian elephant / MIG12-29545888 Dermavet Ointment treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 16, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 16, 2021 00:00	Lisa Bonanni	Complete	~
Sep 15, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 15, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Kathryn Harding	Complete	~
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 07, 2021 00:00	Michael Weaver	Complete	~
Sep 07, 2021 00:00	Kathryn Harding	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 05, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Prescription/Treatment

Basic Info

Date Written

Sep 05, 2021

Start Date

Sep 05, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 05, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Neomycin + Polymixin B + Gramicidin Ophthalmic (1.775 mg/ml Liquid > Solution) (Gramicidin; Neomycin Sulfate; Polymixin B)

Dose Amount

6 drops

Dosage Amount

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Administrated Dose Quantity

6 drops

Frequency

once a day (sid)

Duration

5days

Delivery Route

Topical, ophthalmic

Loading Dose

~

Form of Drug

Solution

Concentration Of Drug

1.775 mg/ml

Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Apply 5-6 drops to the right eye once to twice daily for 5 days.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 09, 2021 00:00	Shara Crook	Complete	~
Sep 08, 2021 00:00	Shara Crook	Complete	~
Sep 07, 2021 00:00	Shara Crook	Complete	~
Sep 06, 2021 00:00	Shara Crook	Complete	~
Sep 05, 2021 00:00	Erica Lipanovich	Complete	~

Sep 04, 2021

Clinical note

Date

Sep 04, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Complaint.  
Keeper reports that this patient has a very runny/watery right eye that seems swollen as well.  
Advised keepers to try to flush with warm water and do some hot compresses for discomfort. Keepers reported that the eye seemed slightly improved in the pm. Will evaluate in the morning.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written	Sep 04, 2021
Start Date	Sep 04, 2021 00:00
Prescribed By	Erica Lipanovich
Prescribed For	1 animal
Reason For Treatment	~

Weight Info

Date	Sep 04, 2021
Measurement Value	2,686 kg
Estimate	Yes
Exclude From Reference Intervals	Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

6days

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 3.5 tablets diluted in water rectally once a day for 6 doses. Monitor for sedation.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 07, 2021 00:00	Michael Weaver	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 05, 2021 00:00	Joseph Golden	Complete	~
Sep 04, 2021 00:00	Joseph Golden	Complete	~

Sep 03, 2021

Prescription/Treatment

Basic Info

Date Written

Sep 03, 2021

Start Date

Sep 03, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Sep 03, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1 mg/kg

Duration

5days

Concentration Of Drug

50 mg

Administrated Dose Quantity

53.72 count

Delivery Route

Oral (p.o.)

Loading Dose

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Treatment Response

Clinical Response

~

Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 53 tablets orally once daily for five days. Monitor for sedation.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 07, 2021 00:00	Kathryn Harding	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 05, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 04, 2021 00:00	Michael Weaver	Complete	~
Sep 03, 2021 00:00	Michael Weaver	Complete	~

Sep 01, 2021

Clinical note

Date

Sep 01, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy with trimming.  
Keeper reports that this is day 4 of patient putting weight on the foot. Medication compliance still remains good at this time.  
Patient is eating all of her diet as well as the hay.  
When laying down, she is rising more smoothly and quickly. Keepers also do not feel that she thinks about her foot placement as much as previously noted.  
No CO2 therapy today.

Objective

Patient in lateral recumbency. Cleaned the foot with diluted chlorhexidine for palpation of the tracks.  
Left front: The white proliferative tissue is not as proliferative today. The tissue is dry, grey to tan in coloration. The skin margins around D2/D3 on the left front are more prominent and dry. There is minimal moisture although the white proliferative crabmeat like tissue is still very squishy feeling along the ventrolateral half of the lesion. The ventral pink/purple tissue appears the same however there is some areas that have black coloration and gently fell off when brushed. No acute bleeding from this area. There appears more of the pink pedunculated tissue along the edge of the slipper. The central track within this pedunculated tissue is still very moist (keeper reports that patient is very uncooperative when placing the powder in this area). Was able to palpate the semicircular space again along the pad under the pedunculated tissue - seems to be the same

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

size and shape. Patient shows distinct discomfort during this so only did it once.

Right front: The D5 lesion is still very dry. There is some long tan papillae like tissue present from this lesion. Can feel some squishy tissue in the central pad defect area that is approximately 2 by 3 cm. The remaining is a dry, thick to papillae like tissue along the lateral margin of the nail. Dry malodorous debris was removed from the tracks around the central lesion. Not very deep - about 1-1.5 cm.

Assessment

less proliferative white tissue to D2/D3, increase in pink granulation tissue to D2/D3, stable D5 lesion

Plan

Trimmed both lesions with #10 scalpel blade. The right front had only the dry pieces trimmed. One freeze/thaw cycle performed today with metal cryotherapy. Not aggressively treated. Canker powder applied to the lesion and all tracks. Minimally uncomfortable for patient today.

The left front was washed off with diluted chlorhexidine for palpation of the tracks. Patted dry. Trimmed the necrotic tissue off either by cutting or scraping with scalpel blade. The dry, flaky skin was removed with no indications that there was pain or discomfort. Three freeze/thaw cycles performed with metal cryotherapy today. Topical application of canker powder with packing within the tracks as well.

CO2 therapy is tomorrow (three times weekly for the next week).

No change in therapy at this time as compliance seems good for now.

QOLA - meeting attended today.

E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Aug 31, 2021

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Aug 31, 2021	Date	Aug 31, 2021
Start Date	Aug 31, 2021 00:00	Measurement Value	2,686 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	~		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

20,413.6 mg

Dosage Amount

7.6 mg/kg

Administrated Dose Quantity

20,413.6 mg

Frequency

once a day (sid)

Duration

14days

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

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Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 3 scoops dissolved completely in water rectally every day for 14 doses. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

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Calendar Items

Dispensing Records

Administration Records

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Aug 31, 2021

Start Date

Aug 31, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

~

Weight Info

Date

Aug 31, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40.9 g

Dosage Amount

0.015 g/kg

Administrated Dose Quantity

40.9 g

Frequency

once a day (sid)

Duration

14days

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

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Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally every day for 14 doses. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
Sep 27, 2021	5 / Asian elephant / MIG12-29545888 Metronidazole treatment is complete	Lisa Bonanni	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Michael Weaver	Complete	~
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 07, 2021 00:00	Michael Weaver	Complete	~
Sep 06, 2021 00:00	Kathryn Harding	Complete	~
Sep 05, 2021 00:00	Joseph Golden	Complete	~
Sep 04, 2021 00:00	Michael Weaver	Complete	~
Sep 03, 2021 00:00	Michael Weaver	Complete	~
Sep 02, 2021 00:00	Michael Weaver	Complete	~
Sep 01, 2021 00:00	Michael Weaver	Complete	~
Aug 31, 2021 00:00	Michael Weaver	Complete	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Aug 31, 2021

Start Date

Aug 31, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 31, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Dosage Amount

1 mg/kg

Administrated Dose Quantity

53.72 count

Frequency

once a day (sid)

Duration

3days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

50 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 53 tablets orally once daily for five days. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 02, 2021 00:00	Michael Weaver	Complete	~
Sep 01, 2021 00:00	Michael Weaver	Complete	~
Aug 31, 2021 00:00	Michael Weaver	Complete	~

Aug 30, 2021

Clinical note

Date

Aug 30, 2021

Time

00:00

Significant

No

Subjective

Cryotherapy.  
Keeper reports that patient seems to be putting more weight on the limb today.

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Taking meds and treatments really well. Canker powder reapplied two times previous to cryotherapy.

Objective

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Assessment

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Plan

Three freeze/thaw cycles performed to D2/D3 LF only with metal cryotherapy and then packed the wound and all crevices/tracks tightly with powder until stayed dry. Difficult to pack the semicircular crevice along the ventral pad, below the mass.  
Packed the D5 RF lesion only. Nonpainful and very dry.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 29, 2021

Clinical note

Date

Aug 29, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☐ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy with trimming.  
Keeper reports that patient is still not putting a lot of weight on the foot when at rest but is no longer resting on the front toes/carpus. She is still eating her produce well, still less then normal on the hay and is still very participatory in behaviors. Eating browse well.  
Patient received canker powder as well as the CO2 treatment this morning. Canker powder had been applied morning and midday prior to late afternoon treatment. She does not like the powder and does throw sand at it a lot per keepers.  
Cryotherapy was in late afternoon in lateral recumbency for treatment. Did wash the canker powder off and then gentle scrub with diluted chlorhexidin. Patted dry.

Objective

Left front, digit 2: Dry  
The proliferative white tissue has increased in size the last two days - grown approximately 2-3 cm in some locations. There is some peeling necrotic tissue along the dorsal 1/4th. The lesion extends dorsally from the medial second digit to the middle third digit. 16 cm in length and 29 cm wide. The lesion wraps around the remaining D2 nail edge all the way down to the slipper and around to the middle of D3. It is now 6 cm past the medial nail cuticle. White crabmeat like tissue is visible. There is a large amount of white crabmeat like tissue present along the entire front of the lesion with the tallest section being 2-3 cm. There is several dry areas of necrotic tissue that is tan on the outside and a flaky grey/white tissue underneath. The ventral portion along the bottom is dark pink to purple in coloration and pedunculated. It extends 11 cm outside of the plane of the foot. Probing gently with a finger show the side adjacent to the third digit extends about 2 cm internally along the wall. There is minimal change to the central track - still bilobed within the track but there is some malodorous creamy purulent to fibrin like debris within the channel. Can palpate all along the ventral mass/lesion along the inside of the pad - approximately 5 cm in a semicircular shape tapering to more shallow as traveling to the medial aspect of digit 2. Under the nail it was difficult to see if it still communicates to the medial edge of the lesion adjacent to the nail. The nail edge is not attached except along the slipper only. The slipper to skin margin between digits 1 and 2 has a 0.5 cm depth but no inflammation at this time. The crabmeat like tissue is very pliable, friable and squishy in general, except along the pink pedunculated area which is firm. The ventral pad directly underneath the mass is deviated out some. Can also see some of the white proliferative crabmeat like tissue underneath the nail and growing along the lateral edge along the purple/pink pedunculated tissue and along the D3 margin as well.  
Right front, digit 5: Dry  
The lesion has increased in size again. The lesion is triangular in shape and is 10 cm at each side. It extends under the nail, linear down the pad (parallel with the skin margin) and up to the lateral edge above the cuticle of D5. The tissue is white to tan/brown in coloration. It is dry in consistency. The majority of the cuticle is frayed and appears to be releasing. The nail has been filed almost completely away to try to prevent it from bending. This is where the majority of the weight is being distributed from the left front. There is a 1.5 cm track under the middle of the nail area. Lots of malodorous, dry, necrotic tissue present and follows along the entire pad length to the opposite "corner" of the triangle. Minimally painful today. No trimming done today.

Assessment

Both have increased in size in general but dry due to the canker powder and minimal odor present

Plan

Scrubbed with diluted chlorhexidine and patted dry.  
Trimmed with a #10 scalpel blade the proliferative white crabmeat like tissue and the necrotic grey/white dry tissue. Three freeze/thaw cycles performed with metal cryotherapy to D2/D3 FL. Packed all tracks and the entire lesion with canker powder - moderately painful while doing this.  
Two freeze/thaw cycles performed with metal cryotherapy to D5 FR.  
To continue with therapy at this time.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Aug 29, 2021

Start Date

Aug 29, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

~

Weight Info

Date

Aug 29, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

6days

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3.5 tablets diluted in water rectally once a day for 6 doses. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 03, 2021 00:00	Michael Weaver	Complete	~
Sep 02, 2021 00:00	Michael Weaver	Complete	~
Sep 01, 2021 00:00	Michael Weaver	Complete	~
Aug 31, 2021 00:00	Michael Weaver	Complete	~
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Prescription/Treatment

Basic Info

Date Written

Aug 28, 2021

Start Date

Aug 28, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 28, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,991.6 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

6.7 mg/kg

Duration

30days

Concentration Of Drug

800 mg

Administrated Dose Quantity

22.490 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 22.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Sep 26, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Sep 24, 2021 00:00	Michael Weaver	Complete	~
Sep 24, 2021 00:00	Michael Weaver	Complete	~
Sep 23, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 23, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 22, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 22, 2021 00:00	Michael Weaver	Complete	~
Sep 21, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 21, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 20, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 20, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 19, 2021 00:00	Kathryn Harding	Complete	~
Sep 19, 2021 00:00	Kathryn Harding	Complete	~
Sep 18, 2021 00:00	Michael Weaver	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sep 18, 2021 00:00	Joseph Golden	Complete	~
Sep 17, 2021 00:00	Joseph Golden	Complete	~
Sep 17, 2021 00:00	Joseph Golden	Complete	~
Sep 16, 2021 00:00	Joseph Golden	Complete	~
Sep 16, 2021 00:00	Kathryn Harding	Complete	~
Sep 15, 2021 00:00	Kathryn Harding	Complete	~
Sep 15, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 14, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 13, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 12, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 11, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 10, 2021 00:00	Michael Weaver	Complete	~
Sep 09, 2021 00:00	Kathryn Harding	Complete	~
Sep 09, 2021 00:00	Michael Weaver	Complete	~
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 08, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 07, 2021 00:00	Kathryn Harding	Complete	~
Sep 07, 2021 00:00	Michael Weaver	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 06, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 05, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 05, 2021 00:00	Karen Veary-Santos	Complete	~
Sep 04, 2021 00:00	Kathryn Harding	Complete	~
Sep 04, 2021 00:00	Kathryn Harding	Complete	~
Sep 03, 2021 00:00	Michael Weaver	Complete	~
Sep 03, 2021 00:00	Michael Weaver	Complete	~
Sep 02, 2021 00:00	Michael Weaver	Complete	~
Sep 02, 2021 00:00	Michael Weaver	Complete	~
Sep 01, 2021 00:00	Michael Weaver	Complete	~
Sep 01, 2021 00:00	Michael Weaver	Complete	~
Aug 31, 2021 00:00	Michael Weaver	Complete	~
Aug 31, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 28, 2021 00:00	Michael Weaver	Complete	~
Aug 28, 2021 00:00	Michael Weaver	Complete	~

Aug 27, 2021

Clinical note

Date	Time	Note Author
Aug 27, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

- ☒ Proliferative pododermatitis (canker), Right front digit 5
- ☒ RADIOGRAPHS

Subjective

Elephant veterinary expert, elephant foot expert, and two equine veterinary specialists arrived for patient examination and treatment suggestions. Per keeper staff, patient is now holding the leg up the majority of the time when at rest. Still moving slowly and deliberately when patient does ambulate around barn. Asked to go outside two days ago, however has been content to stay inside for continued stall rest for the last two days. Taking medications well currently orally but rectal medication compliance is still an issue.

Objective

Patient in lateral recumbency.  
There has been minimal change from yesterday's assessment.

Assessment

~

Plan

Lab results from University of Miami - CK values are increased. Haptogen values are higher than previous (indicating prolonged inflammation). No other significant findings at this time.

Diagnostics:  
Opportunistically infused tracks with iothalamate meglumine (43%) with a red rubber catheter to assess depth and projections of tracks throughout the proliferative tissues. Radiographs taken of three different views of D2 on the left front only. Tracks appear to go to the base of P2 to D2 only. Confirmed that P3 is absent, P2 is minimally present and P1 is starting to become affected at the distal end.

Procedures:  
Scrubbed both lesions and all tracks with diluted chlorhexidine and palpated all tracks on both feet.  
D2 nail trimmed and the underlying pad where the soft tissue is enlarged along the medial aspect of the foot. Filed D1 nail on the left front.  
Topical application of canker powder applied to D2 lesion only as well as all tracks. This is medicated and should assist in drying out the lesion. The experts are recommending to not get the lesion wet for the next two weeks. The lesion may be brushed clean with a gentle hand brush or towel but otherwise, no moisture. This powder may be packed on/in the lesion 2-3 times daily. The tissue may need to be debrided as it becomes devitalized and necrotic. This will mean that medicated foot soakings will need to stop for now. Ice packs may be utilized as needed.  
CO2 therapy performed to the front left leg only using a specially manufactured bag. The foot was dampened, and the bag was placed around the foot. All of the air was pushed out and then an ace wrap was placed around the top of the bag to seal it. The medicated CO2 was infused into the bag just enough to get the bag off the skin and left for 20 minutes. Per expert, this should be performed for 3-5 days in a row and then three times weekly as this will help to improve blood flow to the lesion for healing to begin.

Recommendations for potential treatment options:  
Several different methods were suggested to try to improve compliance of medication administration with keeper staff. Current analgesics are adequate at this time and continue with daily assessment of pain control and modify as needed. Current antibiotic therapy is adequate at this time and agree with increasing therapy from every other day to every day administration. As conventional canker therapy does not appear to be assisting with resolution of the lesion, newer therapies are strongly advocated such as the canker powder and medicated CO2 therapy (airjector - vet, manufactured by Respiderm Corp, 99.5% pure carbon dioxide).  
Cryotherapy is still recommended but must be done at different times from the CO2 therapy.  
PMMA beads of cisplatin were discussed as an option, but not at this time.  
Mohr's paste may also be an option to remove the pink pedunculated granulation tissue but not at this time.  
It was recommended to attempt an insulin resistance testing with TRH stimulation following equine standards for testing. To order reagent for testing.  
Consider a special culture for genetic PCR testing to help establish a bank for future knowledge of "normal" flora for elephant pododermatitis.  
Recommend weekly QOL assessments.  
Recommend an additional supplement to assist with skin regrowth in addition to the joint supplementation.  
Guarded to poor prognosis if pain level continues.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Procedure

RADIOGRAPHS

Onset Date

Aug 27, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Aug 27, 2021 00:00

Notes/Comments

Aug 26, 2021

Clinical note

Date

Aug 26, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy with trimming.  
Keeper reports partial success with the tramadol. She is taking other medications fairly well still. She is doing a lot more resting of the left front in a curled position, seeming to rest it on the front face of the carpus. She seems more chipper and is eating better. Have decreased the amount of carbohydrates in her diet to see if there is a nutritional imbalance. After consulting with two other experts regarding diet, the current arthroxigen supplement appears to be very adequate for joint support and anti-inflammatory properties. Agree that it is a good product to keep her on.  
Patient in lateral recumbency for today's session.  
Keepers have still been doing the epsom salt packs post betadine/epsom salt ice bathes in the morning. Evenings have still been exceede/gentamicin flushings and topical application.

Objective

The left front D2/D3 lesion appears taller but does not appear to be significantly wider over D3. It is about 1 cm wider on the medial aspect of the D2 nail edge. The white crabmeat like tissue is taller in several locations. The dorsal 1/3rd of the lesion has a tan to grey mottled dry film over it. Very similar to new skin growth. There is some bruising present to this tissue over the medial D2 and over the lateral D3. The pink pedunculated tissue on the ventral portion appears larger and more internal to the cushion and along the ventral pad. There is some white crabmeat like tissue visible now underneath the nail of D2. The track in the central/ventral edge of the pink pedunculated tissue palpates the same depth however there is a second small nodule palpated underneath the large tissue. Unable to visualize and seemed slightly uncomfortable when palpated.

The front right D5 lesion appears to be about the same size as last week. There was some more malodorous black to dark brown, dry necrotic tissue along the ventral edge of the lesion along the slipper and along the ventral nail. Not painful to palpation or touch.

Noted the left and right zygomatic arches have 2-3 oblong shaped, full thickness lesions from laying on the sand for prolonged periods of time. Nonpainful to palpation and no inflammation or swelling noted. Cleaned with diluited chorhexidine solution and applied vitamin A/D ointment.

Assessment

Left front - slightly larger but more stable  
Right front - stable

Plan

Scrubbed both front feet and all crevices/tracks with diluted chlorhexidine solution. Patted dry. Aggressively trimmed with a #10 scalpel blade the white crabmeat like tissue to the left foot lesion only. Two freeze/thaw cycles of cryotherapy with metal performed today. Flushed all pockets with betadine 10% using a red rubber catheter. Able to get some metal to the tissue sticking out under the ventral nail for two freeze/thaw cycles of cryotherapy. Small amount of trimming done to necrotic tissue and some hard brown tissue on the right front lesion. Small amount of necrotic, malodorous tissue trimmed. Flushed all pockets and tissue with betadine 10% solution.  
Advised keepers to continue with tramadol at 1 mg/kg PO SID for now (per one consultant - saw sedation at 2 mg/kg BID orally). Also to continue with the every other day rectal/oral gabapentin at 1 mg/kg. No change to the rectal antibiotics as compliance is still an issue with her pushing them out.  
Keeper reports that she is finally showing some interest in going outside but the foot lesion seems to finally be calming down, so do not recommend patient go outside for now. Consults with an elephant veterinarian, elephant foot expert and veterinary equine expert tomorrow for full evaluation of the foot and discussion of options. Recommend QOL assessments and/or discussion.  
Consulted with a second equine veterinarian regarding treatment options - planning to send an equine canker powder that contains tannic acid, iodoform iodide powder, zinc oxide and metronidazole. Recommended packing this to the lesion multiple times throughout a day with no foot soakings for 14 days and then debride again. To discuss this option with other experts tomorrow as well. Powder should arrive tomorrow morning.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Aug 26, 2021

Start Date

Aug 26, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 26, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Dosage Amount

1 mg/kg

Administrated Dose Quantity

53.72 count

Frequency

once a day (sid)

Duration

5days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

50 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 53 tablets orally onceee daily for five days. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records		
Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 28, 2021 00:00	Michael Weaver	Complete	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	~

Aug 25, 2021

Clinical note		
Date	Time	Note Author

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Aug 25, 2021

00:00

Lisa Bonanni

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryotherapy - 3 rounds on left front foot, 2 rounds on right front foot

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Aug 25, 2021

Start Date

Aug 25, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

~

Weight Info

Date

Aug 25, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

4days

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3.5 tablets diluted in water rectally once a day for 6 doses. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 28, 2021 00:00	Michael Weaver	Complete	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 25, 2021 00:00	Karen Veary-Santos	Complete	~

Sample

Sample Detail

Collection Date/Time

Aug 25, 2021 00:00

Sample Type

Whole Blood

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Aug 25, 2021	~/~	Available	UMAWLAB/22/22

Notes

~

Printed: Nov 18, 2021

Buttonwood Park Zoo

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Aug 25, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Aug 25, 2021	~/~	Available	UMAWLAB/36/33

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Aug 25, 2021

Requested By

Erica Lipanovich

Laboratory

UMAWLAB

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

target cells 1+  
reactive monocytes - few  
platelet count= 343 10^3/ul  
large platelets present  
platelet clumping

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

### Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Est. WBC count	10.0 *10^3 cells/μL	Global sp RI: 0 - 13   7 [7] N=105 (12)	~	No	~	No
RBC [a]	3.05 *10^6 cells/μL	Global sp RI: 1.86 - 3.53   2.65 [2.62] N=2723 (112)	~	No	No	No
HGB [a]	11.4 g/dL	Global sp RI: 9.9 - 15.7   12.4 [12.3] N=2698 (113)	~	No	No	No
HCT [a]	38.4 %	Global sp RI: 24.6 - 42.0   32.4 [32.0] N=2657 (101)	~	No	No	No
MCV	126 fL	Global sp RI: 102.1 - 146.0   123.4 [122.0] N=2484 (96)	~	No	No	No
MCHC [c]	296.88 g/L	Global sp RI: 329 - 399   369 [370] N=251 (29)	Low	No	No	~
Neutrophil count [m]	2.90 *10^3 cells/μL	Global sp RI: 0.00 - 8.23   3.06 [3.46] N=44 (16)	~	No	No	No
Neutrophil % [m]	29 %	Global sp RI: 12.0 - 46.6   26.1 [25.0] N=416 (43)	~	No	No	No
Band count [m]	0.6 *10^3 cells/μL	Basic Stats: ~ - ~   0.98 [0.00] N=25 (7)	~	No	~	No
Band % [m]	6 %	Global sp RI: 0.0 - 5.0   0.4 [0.0] N=418 (36)	High	No	No	No
Lymphocyte count [m]	1.6 *10^3 cells/μL	Global sp RI: 1.46 - 9.90   4.72 [4.30] N=732 (17)	~	No	No	No
Lymphocyte % [m]	16 %	Global sp RI: 5.0 - 39.0   18.6 [17.5] N=1080 (54)	~	No	No	No
Monocyte count [m]	4.6 *10^3 cells/μL	Global sp RI: 0.000 - 11.341   3.734 [4.059] N=47 (15)	~	No	No	No
Monocyte % [m]	46 %	Global sp RI: 10.0 - 73.0   51.1 [54.0] N=1087 (59)	~	No	No	No
Eosinophil count [m]	0.3 *10^3 cells/μL	Global sp RI: 0.000 - 1.320   0.225 [0.138] N=43 (13)	~	No	No	No
Eosinophil % [m]	3 %	Global sp RI: 0.0 - 6.0   2.2 [2.0] N=1024 (56)	~	No	No	No
Basophil count [m]	0 *10^3 cells/μL	Global sp RI: 0.000 - 0.141   0.006 [0.000] N=42 (11)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 1.0   0.2 [0.0] N=611 (41)	~	No	No	No
nRBC's [m]	0 /100 WBC	Global sp RI: 0 - 1   0 [0] N=76 (19)	~	No	~	No
Polychromasia	none seen		~	~	~	No
Anisocytosis	rare (1+)		~	~	~	No
Est. Platelets	735		~	~	~	No

Sample Detail (GSN: S-PGW21-005878)

<b>Collection Date/Time</b>	Aug 25, 2021 00:00	<b>Collection Method</b>	~
<b>Sample Type</b>	Whole Blood	<b>Collected By</b>	Lisa Bonanni
<b>Anatomical Source/Tissue</b>	~	<b>Reason</b>	~
<b>Additives/Preservatives</b>	~	<b>Exclude from reference intervals</b>	No

### Test & Result

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail	Sample Quality
<div><div>Date Requested</div><div>Aug 25, 2021</div></div> <div><div>Requested By</div><div>Erica Lipanovich</div></div> <div><div>Laboratory</div><div>UMAWLAB</div></div> <div><div>Analysis Start Date</div><div>~</div></div> <div><div>Analysis Equipment</div><div>~</div></div> <div><div>Insufficient Sample</div><div>No</div></div>	<div><div>Color</div><div>~</div></div> <div><div>Color Intensity</div><div>~</div></div> <div><div>Clarity</div><div>~</div></div> <div><div>Consistency</div><div>~</div></div> <div><div>Additional Characteristics</div><div>~</div></div> <div><div>Degraded</div><div>No</div></div>

Notes/Comments
amylase value obtained by dilution
fibrinogen= 600 mg/dl
EPH Interpretation Mild changes in some fractions are present. As the A/G ratio is not decreased, this likely reflects a normal variation in this patient. Followup as clinically warranted.
Acute Phase Protein Verified on: 08/27/21 Test Level Comment Range Low Range High Units of Measure Serum amyloid A 135.7 HI 0 42.5 mg/L SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process. Haptoglobin 5.11 HI 0 1.1 mg/ml As in other species, HP is a minor APP in elephants. Two to three fold increases in this APP have been observed in clinically abnormal elephants. To date, the highest observed value in our laboratory has been 9mg/ml. In most species, HP is believed to be a preferred marker of chronic inflammation. In contrast to CRP and SAA, the increase in HP is delayed 4-6 days after stimulus and its expression is prolonged. As with other APP, repeated measures should have prognostic value.

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Glucose	63 mg/dL	Global sp RI: 54 - 119   83 [83] N=807 (90)	~	No	No	No
BUN	11 mg/dL	Not calculated	~	~	~	No
Creatinine	1.7 mg/dL	Global sp RI: 0.7 - 2.0   1.2 [1.2] N=815 (95)	~	No	No	No
BUN/Creat ratio [c]	~ ratio	Global sp RI: 17.5 - 58.8   32.0 [30.1] N=101 (16)	~	No	No	~
Na	134 mmol/L	Global sp RI: 124 - 138   130 [130] N=821 (94)	~	No	No	No
K	4.7 mmol/L	Global sp RI: 3.8 - 5.4   4.5 [4.4] N=809 (93)	~	No	No	No
Chloride	93 mmol/L	Global sp RI: 85 - 99   91 [91] N=764 (78)	~	No	No	No
Mg	2.2 mg/dL	Global sp RI: 1.80 - 2.90   2.31 [2.30] N=427 (64)	~	No	No	No
Ca	10.6 mg/dL	Global sp RI: 9.1 - 11.8   10.5 [10.5] N=866 (100)	~	No	No	No
Phos	4.1 mg/dL	Global sp RI: 3.0 - 7.0   4.8 [4.7] N=823 (95)	~	No	No	No
Ca:Phos ratio	~ ratio	Global sp RI: 1.3 - 3.3   2.4 [2.3] N=117 (14)	~	No	No	~
Total CO2	19 mmol/L	Global sp RI: 20.0 - 28.0   23.8 [24.0] N=406 (42)	Low	No	~	No
Amylase	3,413 U/L	Global sp RI: 0 - 4,179   1,398 [1,213] N=195 (29)	~	No	No	No
Lipase	12 U/L	Global sp RI: 2 - 31   10 [9] N=144 (28)	~	No	No	No



Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryotherapy - 3 rounds on each front foot

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 23, 2021

Clinical note

Date

Aug 23, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy performed by staff today - three freeze/thaw cycles performed to both front feet lesions.  
E Lipanovich, DVM

Objective

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Assessment

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Plan

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Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 21, 2021

Clinical note

Date

Aug 21, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy  
Keepers report that this patient is now holding the left front up more, leaning a lot more on surrounding structures against her hip and lots of front leg weight shifting. Has shown no interest in going outside.  
This morning she only allowed a short epsom salt paste application before trying to take it off. She is still receiving her ice pack treatment twice daily.  
Rectal medication complaine is still an issue. Still taking the oral gabapentin as she hasn't caught on yet to that.  
Have been in daily communication with three experts the last five days. To discuss medication options as radiology consult results were completed as of today (forwarded on to other professionals for consult).  
Three specialists scheduled to arrive in five days - elephant podiatrist, equine specialist and elephant veterinary specialist (second one).

Objective

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Left front:  
There is superficial bruising present to the dorsal edge (middle - two areas of 5 and 8 mm) and over the middle D3 section (largest - 1.25 cm) The entire dorsal 1/3rd of the lesion has a tan to mottled grey appearance that is dry with no proliferative crabmeat like tissue visible that extends over D3. The middle areas at the D2/D3 interface has more loose necrotic tissue present. The medial lesion has increased in size and lots of white proliferative crabmeat like tissue present (slightly more than two days ago). There is some white proliferative tissue visible underneath the nail. The pink pedunculated to lobular like tissue along the ventral portion has increased in size. There is some necrotic pad present but didn't trim at this time.

Right front:  
The D5 nail is more loose and separated along the ventral pad region. Some necrotic tissue present along the nail edge where attached (trimmed very small amount). The white proliferative crabnmeat tissue appears dry but longer. Can feel pocketing around the lesion around the pad but very painful. The lesion in general seems larger than previous two days.

Assessment

~

Plan

Scrubbed both lesions with dilute chlorhexidine and patted dry. Small amount of trimming performed to some of the necrotic tissue and proliferative tissue on left front only - primarily along the D2/D3 interface area and the medial aspect of the D2 lesion. Three cryotherapy freeze/thaw cycles performed today to D2/D3 only. Flushed all pockets with betadine and red rubber catheter on both feet.

Communicating all results of today and current status of patient to experts - awaiting response.  
Discussed with staff increasing the metronidazole/enrofloxacin administration from EOD back to SID, even if compliance is an issue. Also discussed increasing the oral gabapentin. Recommend QOL assessments.  
Elected to not start application of the Mohs paste today as the hurricane is due to arrive tomorrow and may be unable to check lesion status.  
Cryotherapy pending for tomorrow as well - weather dependent.  
To continue with all therapies at this time and stall rest pending suggestions by experts.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info	
Date Written	Aug 21, 2021
Start Date	Aug 21, 2021 00:00
Prescribed By	Erica Lipanovich
Prescribed For	1 animal
Reason For Treatment	Medical

Weight Info	
Date	Aug 21, 2021
Measurement Value	2,686 kg
Estimate	Yes
Exclude From Reference Intervals	Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Tramadol (50 mg Solid > Tablet) (Tramadol)

Dose Amount

2,686 mg

Dosage Amount

1 mg/kg

Administrated Dose Quantity

53.72 count

Frequency

every 2 days (q2d)

Duration

1days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

50 mg

Treatment Response

Clinical Response

~

Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 53 tablets orally twice daily for one day. Monitor for sedation.

Prescription Notes/Comments

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 25, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 24, 2021 00:00	Karen Veary-Santos	Complete	switch to SID
Aug 22, 2021 00:00	Karen Veary-Santos	Complete	~

Aug 19, 2021

Clinical note

Date

Aug 19, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy.

Keeper reports that patient seems to be eating less of the hay but is eating everything else okay.

Keepers used the clean tracks product this morning - soaked for 15 minutes and 15 minutes of the vapor therapy afterwards.

Discussed with the elephant podiatrist regarding other topical options. A equine specialist recommended adding a topical canker recipe. To order the ingredients.

They both recommended a neutracutical for joint supplement. Looked at the product - same ingredients as the arthroxygen, which she has been on for years.

Objective

The lesion on the left front appears visually the same size but there is a thick layer of yellow to clear fibrin over the ventral pink granulation tissue. Three freeze/thaw cycles performed to the lesion with no trimming at there is no necrotic tissue to trim at this time.

The lesion on the right front appears slightly more enlarged. Longs ends to the crabmeat like tissue. Cryotherapy performed to help numb the lesion, trimmed ends with a #10 scalpel blade and then cryotherapy performed again.

Both lesions received betadine topical as well as to the pockets. Moderate amount of malodorous creamy white to green purulent debris removed while flushing the pockets on the left front.

Patient did really well while in lateral recumbency and keeper reports no change to pain level.

To continue to monitor.

E Lipanovich, DVM

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Assessment

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Plan

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Animal Care Staff Medical Summary

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Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Aug 18, 2021

Clinical note

Date	Time	Note Author
Aug 18, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Elephant Veterinary Consultant report:

<u>Date of Inspection:</u>	9 August 2021
<u>Species:</u>	Asian Elephants
<u>Identification:</u>	Females, “Ruth”, age 63 yrs
<u>Date of Report:</u>	18 August 2021

Introduction:

I examined the above elephants at the Buttonwood Park Zoo in New Bedford, Massachusetts, on 9 August 2021. Present for the examination was the Zoo’s Veterinarian, the Assistant Zoo Director and the Zoo’s Elephant Care Staff. This was my first examination of the feet of “Ruth”, a 63 year old, female Asian Elephant.

In July of 2021, the Zoo asked me to examine both elephants in order to evaluate the problems that they are having with their feet and to give my opinion of the status and severity of their foot issues.

This report is my written evaluation of their current foot conditions as found by my exam done on the 9<sup>th</sup> of August 2021 and my recommendations for a continuing management plan for them.

History:

Both “Ruth and “Emily have lived at the Buttonwood Park Zoo for most of their lives. It is my understanding that both came into captivity as rescued orphans.

They have both developed foot issues in the recent years, which have been controlled by the Elephant Staff. However, lately Ruth’s left front foot has developed an issue with the #2 digit that has not responded to their usual foot care program. To help them out, the Zoo has brought in an Elephant Foot Care specialist. Since then the toe has regressed but then the problem expanded. I was then asked to come in as a Veterinary Elephant Care Specialist.

Overall Findings:

Ruth, during my exam, was a calm, slow moving elephant that was managed in a “free contact” system for most of her life, but is now in a “protected contact” management system, except for the times that she needs foot care, which is done when she is lying down. She lays down on command for the foot care sessions and still has the ability to get up after the treatments. Unfortunately, she has a severe conformational problem of being pigeon toed and also has excessive medial twisting of the carpal joints on her front legs, especially with the left front leg. This results in abnormal pressure on her front feet. She also walks with a stiffness in both front legs with the left front having the most stiffness.

Exam of Ruth’s Feet:

Examination of Ruth’s front feet reveals that she has had a severe “abscess” associated with her left front foot digit #2. The staff and veterinarian and their foot care consultant have been trying to arrest the advancement of the problem, but it continues to become worse. There is a large amount of reactive, proliferative tissue, usually referred to as “crab meat”, that has dramatically developed over the last few days. She has a bed of normal granulation tissue at the nail/pad junction that is very tender and bleeds easily. The #2 nail is completely gone, except for a small segment that is being undermined and will eventually come off. She currently has a defect on her left front foot, nail #5, also.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Radiographs were taken of Ruth’s left front foot, both carpi and her right patella.

**Facilities:**

Ruth and Emily’s outside area consists of large grass and sand exhibit yards, with a sand pile for resting, a pole structure, and shaded areas. They also have numerous exhibit enrichment items in their outside yards.

Their inside quarters consist of soft sand substrate and a “chute” that acts as a restraint device.

**Treatments:**

Ruth is currently on anti-inflammatory, pain medications and antibiotics at appropriate levels, for her toe and joint issues. She is on regular examinations and treatments of her front feet, including abscess trimming and cryotherapy, regular nail trimming and foot soaking.

I administered no medications during my inspection.

**Staff Instructions:**

In my verbal instructions to Staff, I reinforced the importance of movement to aid in blood perfusion of both elephant’s feet, but to not to overdo the exercise with Ruth. Exercise is also important for Ruth due to the arthritis found in her carpi on both front legs.

I commend the Elephant Care Staff on their dedication to give Ruth and Emily the best possible care that they can—both physical and mental. The Assessment section and the Proposed Plan section detail my suggestions for the future.

**Assessments:**

- Visual evaluation of Ruth reveals severe conformational problems in her front legs—pigeon toed stance and severe medial twisting of both front feet, with the left front the worst one.
- Ruth also walks with stiff front legs. This condition in elephants is usually due to some sort of painful experience that the elephant has encountered. It is my opinion that they do not want to flex the leg for fear of eliciting pain, so they don’t bend the leg and after a time period, the leg becomes fixed in a straight position. The other reason for walking with stiff legs is due to arthritis in her carpal joints, this is probably the situation in Ruth’s case. Flexing of arthritic joints in elephants appears to be painful. However, evaluating painful conditions in elephants can be a challenge.
- Historically, elderly elephants with poor conformation that develop toenail issues, getting the abscesses to heal out, is not possible. Rather, control of the problem is the usual game plan. If the abscess does heal, invariably it comes back.
- Most invasive toe abscesses affect the last bone in the toe (P3), resulting in fractures and deterioration of that bone. This is usually not a major consequence.
- If the toe abscess starts to affect the other bones of the toe (P2 and P1), this can result in severe osteomyelitis. This condition is very difficult to resolve with antibiotics and usually necessitates a major surgical procedure to remove the affected bones. A three to four hour anesthetic time for the surgery is anticipated. Aftercare is extensive and difficult to accomplish in a Protected Contact Management System, due to the daily cleaning and changing of the specially constructed boot to protect the surgical site. Healing takes months to accomplish.
- Radiographs of Ruth’s left front foot, digit #2, reveals considerable boney changes with the ongoing damage starting to affect the bones in that digit. Mainly, it appears that P3, the last bone in the toe, has disintegrated and the next bone up, P2 is starting to become involved. More information will be available upon evaluation of the radiographs by a radiologist.
- Radiographs of both carpi in her front legs, reveals arthritis. This will also be categorized by the radiologist.
- Ruth is slow moving, which may be her “old age” nature, but she walks with stiff front legs, especially the left front. This may be a sign of pain due to the arthritis in her front legs and toes and the aggressive abscess in her left front foot, digit #2. (See above comments.)
- I did not observe Ruth having any abnormal behaviors or signs of being stressed, i.e. stereotypic behaviors.
- It is assumed that Ruth, at age 63, is having issues with her last set of molars, and may in fact not have the ability to properly chew her food items. It is impossible to evaluate her teeth visually due to her inability to raise her trunk in the usual “trunk up” position to expose an open mouth for evaluation of her teeth. Therefore the keepers are shredding her hay, and feeding small, cut up treats and pellets.
- The Staff is aware of all of the issues that I have brought up, and are concerned for her quality of life. They have started a program to evaluate and log her condition in a quantifiable manner to see how she progresses.
- If the severity of the abscess in her left front foot continues, despite intensive care by Staff and the Foot Consultant, and the radiologist confirms the changes in the bones of the toe and the status of the arthritis in her front legs, the Staff should consider humane euthanasia.
- The staff should be commended for their efforts.

**Proposed Plan:**

**Ruth’s Foot Problem:**

- - Continue to treat this as a medical problem, for now.
  - Continue antibiotics, pain meds and anti-inflammatories.
  - Continue with the aggressive foot care regarding the proliferative “crab meat” tissue.
  - Avoid damaging the granulation bed at the nail/pad junction.
  - Continue with utilizing the Foot Care Consultant and consider that on a bi-weekly basis.
  - Await the radiologists evaluation of the radiographs, regarding the bones of the foot and carpus.
  - Continue periodic blood samples for signs of systemic disease.
  - Repeat the toe and carpal radiographs at two week intervals.
  - Encourage some movement to maximize blood flow to her feet.
  - Continue to monitor her utilizing the Quality of Life protocol.
  - Maintain Ruth at the zoo due to her medical issues. She is in no condition to be moved.

**Objective**

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**Assessment**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Plan

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Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Clinical note

Date	Time	Note Author
Aug 18, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Cryotherapy and Update.  
Keepers report that patient is moving the same as yesterday - still slow and deliberate but seems more comfortable. Patient does not indicate that she wants to go outside. Is interacting with staff and the environment for now. Keepers observe her when she turns on the front left that it appears to hurt her if she moves too quick. To continue with icing (or ice bathe) and stall rest for today.  
No changes to meds at this time.

**Objective**

Patient in lateral recumbency.  
Both lesions appear grossly enlarged compared to yesterday.  
There is a thin layer of clear to pale yellow serous to fibrin like material coating the left front lesion. There was a small piece of skin that was torn from where it had enlarged along the medial aspect of the nail/cuticle. There was a large amount of white gelatinous to early crabmeat tissue present there now. Approximately 3 cm wide and 6 cm in length.  
There was a small amount of grey to tan necrotic tissue along the dorsal 1/3rd of the lesion. Palpation of the pink granulation tissue along the slipper/pad reveals that there are now nodules present. Palpated a 5 cm track that went medial/dorsal under the large pink granulation tissue. It feels like the pink granulation tissue is lobulated and this track is between lobules/nodules. Necrotic tissue and debris manually removed gently. Small amount of bleeding from the tissue while cleaning it.  
The right front lesion also appears slightly more enlarged but was not painful to gentle palpation.

**Assessment**

~

**Plan**

Therapy only performed to the left front only today. Very small amount of necrotic tissue removed along the dorsal1/3rd (<1mm to 3 mm) with a #10 scalpel blade. Some of the white spongy crabmeat was removed along the lateral lower half (3-5 mm). Only a small amount was shaved off today.  
Scrubbed lesion with diluted chlorhexidine solution and patted dry.  
Cryotherapy with metal performed - 2 freeze/thaw cycles performed today.  
All pockets and tracks were flushed with betadine 10% and a red rubber catheter.  
The right front also had pockets flushed with betadine. No cryotherapy.  
To monitor closely. Recommend QOL assessments.  
E Lipanovich, DVM

Addendum: radiograph DICOM's successfully submitted today. Keepers still working on getting blood from patient. To apply Excede/gentamicin topically to the lesion. To try a product that was recommended by the elephant podiatrist called CleanTrax tomorrow as a disinfectant for the lesions (used in horses). Mix content of bottle with one gallon of tap water. To use plastic bag to wrap a front foot with this product for 30 minutes. Do not rinse off per instructions of the product. Do not think patient will allow more wrapping with a plastic bag to help the vapors but will try. Plan to try doing both feet if patient will tolerate. To use this product in place of a foot soak tomorrow.

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
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Aug 17, 2021

Clinical note

Date	Time	Note Author
Aug 17, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

NoNo

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy with trimming again.  
Keepers report that the lesion oozed some clear yellow, fibrin like material yesterday evening. Very moist this morning.  
Also report that patient is moving the same as yesterday afternoon - better but still lame.

Objective

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Assessment

~

Plan

There was some more excess white crabmeat tissue present from yesterday but not as much. There was still the dry, squishy, flaky crabmeat like tissue that readily came off when scraped with a #10 scalpel blade at the vertical, linear D2/D3 interface. Scrubbed with diluted chlorhexidine solution and patted dry. Ice pack placed for 5 minutes prior to trimming. Removed approximately 2-7 mm of white crabmeat tissue was removed with a #10 scalpel blade. Small amount of oozing at the linear interface and the lateral outside edge of the pink granulation tissue. Some of the slipper along the D2/D3 margin was necrotic and had a shelf present. Trimmed back. Accidentally bumped the pink granulation tissue and it started to ooze liberally.  
Two to three freeze/thaw cycles performed of cryotherapy to D2 lesion on the left front. No evidence of discomfort will trimming or cryotherapy. Flushed all pockets with betadine solution and red rubber catheter.  
Trimmed a small amount of necrotic crabmeat tissue ends from the D5 lesion with a #10 scalpel blade. Seemed uncomfortable. Able to palpate a track that went along the ventral nail edge more under the slipper. Trimmed this open and removed some of the necrotic tissue. Extends about 1.5 cm under the nail and into the pad. Two freeze/thaw cycles performed of cryotheray to this lesion today. Flushed all around the crabmeat tissue with betadine solution and red rubber catheter.  
To continue with stall rest since patient is still not interested in a lot of walking around and continue with other medications as dispensed. To also ice pack this lesion twice daily.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 16, 2021

Clinical note

Date

Aug 16, 2021

Significant

No

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy and trimming.  
Keeper reports that patient has been very active the last few days and is now very very lame this morning. Holding the left front differently than normal and very slow and deliberate when ambulating.  
Received all meds today.  
Ice packs done pre and post treatment this morning.  
Lateral recumbent for therapies today.

Objective

Noted there was a vertical line of necrotic tissue that appeared to be between digits 2 and 3 - approximately 2 cm in width and extended the full length of the lesion to the commissure at D2/D3.

Assessment

~

Plan

Aggressively trimmed the white crabmeat and necrotic tissue to the left front lesion with a #10 scalpel blade. No active bleeding but small amount of pink tissue in places. There was one small area that did ooze after trimming. Two full freeze/thaw cycles performed with metal to the entire area of white crabmeat including the new are on the medial aspect of D2 cuticle edge. The pink granulation tissue was not trimmed or cryotherapy performed.  
Trimmed the D2 nail edge more using trimmers and filed D3 more.  
Flushed all pockets along the slipper/pink granulation tissue margin with betadine and a red rubber catheter. Probed gently with finger - approximately 5 mm under the nail/slipper margin that then changes to 1 cm at the middle. The deepest pocket is 2 cm. The margin of the foot that can be palpated is very smooth under the pink granulation tissue and nonpainful to palpation.  
One freeze/thaw cycle of cryotherapy performed to the right front lesion. Can feel some necrotic tissue under the nail but as this patient is so lame today, only flushed this area with betadine and left alone.  
Ice packs applied to both front feet again for 10 minutes post treatment.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

To continue to monitor very very closely.

To discuss with staff doing cryotherapy every single day with trimming of the necrotic tissue as needed.

To continue with stall rest and ice packing of the area once to twice daily for additional pain relief.

E Lipanovich, DVM

Addendum: Keepers report that this patient seems more comfortable in late afternoon compared to yesterday morning.

**Animal Care Staff Medical Summary**

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 15, 2021

Clinical note

<b>Date</b>	<b>Time</b>	<b>Note Author</b>
Aug 15, 2021	00:00	Erica Lipanovich
<b>Significant</b>	<b>Private</b>	<b>Active Problems</b>
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy and Assessment.

Objective

Patient is BAR. Actively not wanting to participate in the session.

Left front, digit 2:  
The lesion extends dorsally from the medial second digit to the middle third digit. 18 cm in length and 30 cm wide. There is a loose curled piece of skin that is attached still on the medial side of digit 2 where the lesion has now spread to the outside edge of the still attached nail (full length to the edge of the slipper). It is now 1 cm past the medial nail cuticle. White crabmeat tissue is easily visible. There is a large amount of white crabmeat present along the entire front of the lesion with the tallest section being 3 cm and necrotic brown tips. The ventral portion along the bottom is pink and pedunculatedwith a thin white fibrin like layer. It extends 6 cm outside of the plane of the foot. Probing with a red rubber catheter tip show the side adjacent to the third digit extends about 3 cm internally along the wall. Unable to get the red rubber catheter under the lesion along the slipper in several locations but where could, it is approximately 1 cm in depth. Under the nail it was difficult to get it into the channels previously used. The nail edge is still attached and seems to be flexing. The slipper to skin margin between digits 1 and 2 still has a 0.25 cm depth but no inflammation at this time. The tissue is very moist in general, soft and squishy except along the pink pedunculated area and directly over the lateral aspect of the pink tissue which is hard.

Right front, digit 5:  
The lesion is now triangular in shape and is 6 cm at it longest, flat edge from the nail edge to the adjacent pad. It is 4.5 cm in length to the edge of the slipper and curls around along the slipper edge about 4 cm. The tissue is white to grey and mostly crabmeat. The medial half of the nail is frayed along the cuticle and appears to be releasing. There is more tissue visible under the nail the previously seen. The previous track on over the lateral 1/3rd of the nail is still present but no change noted.

Assessment

both have increased in size.

Plan

Keeper reports that this definitely seems to be less painful despite the lesions increasing and size and has been wanting to walk around the exhibit a lot more than usual. Actively engaged in her environment.

Attempted to trim some of the necrotic tips of the crabmeat tissue but patient was not very cooperative. Able to get one freeze/thaw cycle of the left front before patient no longer wanted to participate. She finally did come back and flushed the pockets with betadine and topical application of betadine to the entire lesion.

Recommend tomorrow's session be in lateral recumbency.

E Lipanovich, DVM

Addendum: attempting to submit the radiographs the last three days but the system is not set up for external sharing. Put in phone call for request for outside access permission, but have not received a call back. To contact radiology consult Monday and see if they will accept JPEG's images rather than the DICOMs.

Keeper reported at the end of the day that this patient was very slow to ambulate around and seemed painful on the front left foot. To initiate stall rest for the next few days and start ice packs again.

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 13, 2021

Clinical note

<b>Date</b>	<b>Time</b>	<b>Note Author</b>
-------------	-------------	--------------------

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Aug 13, 202100:00Erica Lipanovich

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.  
Keepers report that this animal is moving around really well on harder surfaces and is acting very grumpy to staff.  
To monitor closely.  
Staff are going to try to get the oral gabapentin in but very concerned with the taste that there will be aversion to her oral ibuprofen. Will need to be monitored closely.  
E Lipanovich, DVM

Objective

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Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 12, 2021

Clinical note

Date

Time

Note Author

Aug 12, 2021

00:00

Lisa Bonanni

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryotherapy, left front foot. Poorly behaved. Only 1 round of cryo accomplished.

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 11, 2021

Clinical note

Date

Time

Note Author

Aug 11, 2021

00:00

Lisa Bonanni

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryotherapy, left front foot. 3 freeze/thaw cycles performed. Well-behaved.

Animal Care Staff Medical Summary

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Aug 11, 2021

Start Date

Aug 11, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 11, 2021

Measurement Value

2,686 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

3,223.2 mg

Frequency

every 2 days (q2d)

Form of Drug

Tablet

Dosage Amount

1.2 mg/kg

Duration

5doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

4.029 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 4 tablets orally alternating between the rectal administration every other day for 5 doses. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Aug 19, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 24, 2021 00:00	Kathryn Harding	Complete	oral
Aug 22, 2021 00:00	Karen Veary-Santos	Complete	oral
Aug 20, 2021 00:00	Michael Weaver	Complete	oral
Aug 18, 2021 00:00	Karen Veary-Santos	Complete	oral
Aug 16, 2021 00:00	Kathryn Harding	Complete	oral
Aug 14, 2021 00:00	Michael Weaver	Complete	oral

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date	Time	Note Author
Aug 09, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5 <input checked="" type="checkbox"/> Radiograph

Subjective

Radiology Consult Results

Objective

Patient Information					
Patient:	Asian Elephant, Ruth, , ,	Patient ID:	5	Report Number:	39008
Patient Birth Date:	00000000	Age:	000Y	Gender:	F
Study Description:		Accession:		Study Date:	20210809
Species:		Breed:		Modalities:	DX
Sedation Used:	No	Anesthesia Used:	No	Submitted By:	John Pauley
Facility:	Brookfield Zoo	Submitted:	2021-08-18 19:34:22 UTC	Finalized:	2021-08-20 15:58:50 UTC
Annotated Images Requested: No			STAT Request: 0		
Anatomical Region: Left front D2/D3 (A/P and oblique), A/P bilateral carpi, right lateral knee					

History

Proliferative pododermatitis to the right front D5 and left front D2/D3 (diagnosed three times via biopsy). The left front has slowly lost the P3 of D2 two months ago. However P2 and P1 appear to be affected now.

This is an almost 63 year old, female Asian Elephant. This patient has a large proliferative lesion to the left front D2 and traveling over to D3. Both front carpi and the right knee were radiographed opportunistically. Two different views were taken of the D2 lesion. This patient has severe conformational abnormalities of the front legs - pigeon toed with rotation of the nails. Currently on metronidazole, enrofloxacin, ibuprofen and gabapentin.

Findings

August 9, 2021: 8 radiographs are available for review. Radiographs includes right carpus (3), left carpus (1), right stifle (1), and left distal extremity (3). Digits are not labeled.

Right Carpus:

There is a small amount of osseous proliferation between the distal interosseous space of the radius and ulna. There are lobular periarticular osteophytes on the margins of the antebrachiocarpal joint. Small enthesophytes are on the lateral margin of the ulnar carpal bone, 4th carpal bone, and base of the 5th metacarpal bone. Small enthesophytes are on the medial margin of the radial carpal bone and 2nd carpal bone.. There is an irregular, angular mineral material within the soft tissue medial to the distal radial carpal bone. There are osteophytes along the peripheral margins of the middle carpal joint. Small, lobular enthesophytes and osteophytes are on the base of the metacarpal bones. The cutaneous margins are irregular with punctate, granular mineral foci. There is mild medial angulation of the distal carpus and metacarpal region relative to the long axis of the distal radius/ulna.

Left Carpus:

There are lobular enthesophytes on the distal margins of the radius and ulna. There is interosseous mineral proliferation. There are mild lobular osteophytes and enthesophytes on the margins fo the antebrachiocarpal joint, middle carpal joint, and carpometacarpal joints; the lateral aspect of the base of the 5th metacarpal bone is most affected. There is also irregular mineral proliferation within the intercarpal spaces. The cutaneous margins are irregular with punctate, granular mineral foci.

Right Stifle:

The patella is smoothly margined; the articular margin is normla. The soft tissue surrounding the patella is normal. The distal femoral condyle is smoothly margined.

Left Distal Extremity - Digits are not labeled, the digit in the center of dorsoproximal-palmarodistal image will be referred to as 'Digit A' and digit to the left of the image will be 'Digit B':

The cutaneous margins of the dorsodistal extremity are severely irregular; there are multiple defects disrupting the cutaneous surface. There are also thickened soft tissue projections associated with the defects. Granular mineral foci interdigitate within the cutaneous defects. The most affected cutaneous defect is adjacent to Digit A (see annotated image). The P3 of Digit A is indistinct and not identified. The distal aspect of the Digit A P2 is lytic with ill-defined distal articular margin. The proximal interphalangeal articular margins are smooth. The P1 of Digit A is normal for shape. There is severe heterogeneous tissue superimposed on Digit A, the distal aspect is more affected. There is soft tissue swelling proximal to the toe nail region. The cutaneous margins are irregular with punctate, granular mineral foci. There are two ossified bodies of P3 Digit B; the borders are smooth. There are angular margins of the peripheral P3 of Digit B. There are osteophytes on the margins of the distal P2 of Digit B. There are osteophytes on the margins of the proximal interphalangeal joint of Digit B.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Impressions

1. Severe left distal extremity proliferative dermatitis with cutaneous defects and regional cellulitis, edema, fibrosis, and/or abscessation.

2. Indistinct P3 of Digit A can be either due to inflammatory erosive osteitis or septic osteitis (or distal interphalangeal septic arthritis). Alternatively, depending on the extent of the proliferative dermatitis, the P3 may have been lost due to a large cutaneous defect or surgical debridement.

3. Digit A distal P2 articular erosion; consider inflammatory erosive osteitis, septic distal interphalangeal erosive arthropathy, or septic osteitis.

4. Mild degenerative joint disease of the distal interphalangeal joint and proximal interphalangeal joint of Digit B.

5. Digit B bipartite P3; common for elephants. Chronic P3 fracture is less likely.

6. Mild degenerative joint disease of the right antebrachiocarpal joint, middle carpal joint, and carpometacarpal joints. The mineral body in the medial aspect of the right carpus can be synovial dystrophic mineralization, intercarpal ligament mineralization, cartilaginous mineralization, synovial osteochondroma, or fractured osteophyte.

7. Mild degenerative joint disease of the left antebrachiocarpal joint and middle carpal joints with moderate lateralized carpometacarpal degenerative joint disease. There is also intercarpal enthesopathy of amongst the left carpal bones; proximal row and distal row.

8. Bilateral distal interosseous mineralization is likely age-related change.

9. Granular superficial debris on multiple areas likely represents dirt. The heterogeneous appearance to the dermis is typical of the species.

Recommendations

Based on clinical history, Digit A likely represents the Digit 2.

Report on 2021-08-20 15:58:50 UTC signed by:

Eric T. Hostnik

Eric T. Hostnik, DVM, MS, DACVR, DACVR-ED

Assessment

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Plan

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Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Clinical note

Date

Aug 09, 2021

Significant

No

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

☒ Radiograph

Subjective

Elephant Veterinary consultation - report to follow.  
Elected to take more radiographs of this elephant after cryotherapy in the morning - two freeze/thaw cycles performed to the left front and one freeze/thaw cycle performed to the right front. Small amount of trimming on the white crabmeat tissue only and some of the necrotic tissue.  
Radiographs taken of both carpi, right patella and left front foot (different angle). To send out to radiology consultant for additional opinion.  
Observed this patient ambulating outside - very slow, very deliberate with her foot placement. Seems to be uncomfortable.  
Did receive rectal medications today and keepers report that she was very tolerant of it today.  
To continue with every other day antibiotics and gabapentin rectally.  
To add in gabapentin orally at 1 mg/kg in the alternating days, mixed in with the ibuprofen to hopefully mask it's presence, once daily. Concerned there will be regression of ibuprofen oral administration due to taste aversion. Keepers are to monitor very very closely  
Discussed a topical treatment called Mohs paste that could cauterize the pink granulation tissue in addition to killing the tissue with consultant. Plan to order from a compounding pharmacy and try application to remove tissue.  
E Lipanovich, DVM

Objective

~

Assessment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

Radiograph

Onset Date

Aug 09, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Aug 09, 2021 00:00

Notes/Comments

Severe degenerative osteoarthritis confirmed to both front carpi.  
Patella on the right knee - appears normal at this time. No evidence of osteoarthritis at this time.  
Left front, D2 - P3 is not present. P2 is minimally visible (can see on inverted). P3 is about half affected. There is a decreased density present to the distal half. There is a clear demarcation visible.

Aug 08, 2021

Clinical note

Date

Aug 08, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy.  
Keepers report that this patient is moving around well today.

Objective

Left front, digit 2:  
The lesion extends dorsally from the medial second digit to the middle third digit. 14 cm in length and 22 cm wide. There is a large amount of white crabmeat extending along the entire face of the lesion. The venral portion along the bottom is pink and pedunculated today with a thin white fibrin like layer. The previous biopsy site is not seen. It extends 10 cm outside of the plane of the foot. There is a crescent shaped necrotic, pink and white section of tissue underneath the nail, curving under the pedunculated tissue and between this and the slipper. Probing with a red rubber catheter tip show the side adjacent to the third digit extends about 4 cm internally along the wall. Unable to get the red rubber catheter under the lesion along the slipper in several locations but where could, it is approximately 1 cm in depth. Under the nail it was difficult to get it into the channels previously used but able to along both sides of the necrotic tissue, slipper margin and pedunculated tissue. The nail edge is still attached and seems to be flexing. The tissue is very moist in general, soft and squishy except along the pink pedunculated area and directly over the lateral aspect of it which is hard.  
Right front, digit 5:  
The lesion is now triangular in shape along the ventral slipper and is 7 cm at it longest, flat edge from the nail edge to the pad. It is 4 cm in length to the edge of the slipper and curls around along the slipper edge about 3 cm. The tissue is white to grey and mostly crabmeat like. The nail edge that has been trimmed is clean and can see crabmeat tissue underneath it.

Assessment

Still slightly growing for both lesions.

Plan

Cryotherapy performed to the band of proliferative tissue along the skin to lesion edge all the way around the dorsal and lateral edges. Used metal and approximately a 4 cm wide band all the way around.  
Patient did great.  
E Lipanovich, DVM

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Aug 08, 2021  
**Start Date** Aug 08, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Aug 08, 2021  
**Measurement Value** 2,726 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40,890 mg

Dosage Amount

15 mg/kg

Administrated Dose Quantity

40,890 mg

Frequency

every 2 days (q2d)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally every other day for 14 doses. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

40.9 gm

Calendar Items

Date	Title	Assigned To	Done
Sep 03, 2021	5 / Asian elephant / MIG12-29545888 Metronidazole treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 28, 2021 00:00	Michael Weaver	70%	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	switch to SID
Aug 25, 2021 00:00	Karen Veary-Santos	50%	~
Aug 23, 2021 00:00	Karen Veary-Santos	50%	~
Aug 21, 2021 00:00	Joseph Golden	50%	~
Aug 19, 2021 00:00	Karen Veary-Santos	50%	~
Aug 17, 2021 00:00	Karen Veary-Santos	70%	~
Aug 15, 2021 00:00	Karen Veary-Santos	70%	~
Aug 13, 2021 00:00	Michael Weaver	Complete	~
Aug 11, 2021 00:00	Michael Weaver	70%	~
Aug 09, 2021 00:00	Michael Weaver	90%	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Aug 08, 2021

Start Date

Aug 08, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 08, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

20,445 mg

Dosage Amount

7.5 mg/kg

Administrated Dose Quantity

20,445 mg

Frequency

every 2 days (q2d)

Duration

14doses

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

Semisolid

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3 scoops dissolved completely in water rectally every other day for 14 doses. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Sep 03, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 30, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 29, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 28, 2021 00:00	Michael Weaver	70%	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 25, 2021 00:00	Karen Veary-Santos	50%	switch to SID
Aug 23, 2021 00:00	Karen Veary-Santos	50%	~
Aug 21, 2021 00:00	Michael Weaver	50%	~
Aug 19, 2021 00:00	Karen Veary-Santos	50%	~
Aug 17, 2021 00:00	Karen Veary-Santos	70%	~
Aug 15, 2021 00:00	Karen Veary-Santos	70%	~
Aug 13, 2021 00:00	Michael Weaver	Complete	~
Aug 11, 2021 00:00	Michael Weaver	70%	~
Aug 09, 2021 00:00	Michael Weaver	90%	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Aug 07, 2021

Clinical note

Date	Time	Note Author
Aug 07, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Update.  
Keeper reports that this patient is becoming very very difficult to retain the rectal medications.  
Elect to go to every other day for now.  
E Lipanovich, DVM

**Objective**

~

**Assessment**

~

**Plan**

~

**Animal Care Staff Medical Summary**

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Aug 06, 2021

Clinical note

Date	Time	Note Author
Aug 06, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5 <input checked="" type="checkbox"/> Radiograph

**Subjective**

Feet assessment with trimming/filing with elephant podiatrist today.  
Patient in lateral recumbency for the work.  
Opportunistically radiographed both front feet lesions.

Lots of corrective trimming performed.  
See full assessment from podiatrist which will be sent at a later date.

**Objective**

~

**Assessment**

Assessment - stable to improved to the pockets around the left front digit 2. More proliferative tissue present along D2/D3 on the left front.  
D5 on the right front had a fair amount of sand impacted behind the nail that was flushed out - painful.

**Plan**

Foot treatments:  
Front left - ice pack for 15 minutes, epsom paste pack for 15 minutes, cryotherapy Sunday-Thursday and topical betadine with flush in AM  
Front right - vetadine soak for 15 minutes in AM with epsom salt paste pack for 15 minutes in AM

Front left - betadine/espom salt soak for 15 minutes with excede flushing/topical.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

Radiograph

Onset Date

Aug 06, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Aug 06, 2021 00:00

Notes/Comments

Digit 5 on the right front still appears to have a good density and alignment at this time. There is two pieces of P3 that is normal for this bone. Digit 2 on the left front still is missing P3 and now the anterior 1/3rd of P1 is thinning in density. P2 is minimally visible. Cortices appear good so do no see evidence of osteomyelitis at this time. Alignment appears normal at this time. Digit 3 on the left front is still within normal limits with good alignment and normal density.

Aug 05, 2021

Clinical note

Date

Aug 05, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy.  
Patient was in lateral recumbency.  
Keeper reports that patient is much more active and in a very good mood today.  
She is actively trying to defecate out the medications post treatment now.  
Also noted that she is passing 50% normal sized fecal boluses and 50% smaller fecal boluses. Assumed that it is due to the new chopped hay that she is consuming and likes.

Objective

Both proliferative lesions appear about the same if not slightly (mm's) larger but stable at this time.  
D5 on the front right has a dark area of separation at the top of the cuticle (lateral 1/3rd) that was not there yesterday.

Assessment

~

Plan

Cryotherapy performed - two freeze/thaw cycles performed to each foot. Patient did great.  
Trimmed D5 tip more to elevate off the ground to prevent further movement. There was more proliferative tissue visible.  
Flushed all lesions' pockets with betadine. The D5 pocket underneath the nail found yesterday was about 1 cm in depth and does communicate to the upper black opening along the top of the cuticle.  
Due to pads getting so soft, elect to do ice packs and topical and pocket flushes once daily and once daily foot soakings for 15 minutes.  
To recheck tomorrow.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Aug 05, 2021

Start Date

Aug 05, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Aug 05, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,991.6 mg

Dosage Amount

6.6 mg/kg

Administrated Dose Quantity

22.489 count

Frequency

twice a day (bid)

Duration

30days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

800 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 22.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Sep 03, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Printed: Nov 18, 2021

Buttonwood Park Zoo

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 25, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 25, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 24, 2021 00:00	Joseph Golden	Complete	~
Aug 24, 2021 00:00	Joseph Golden	Complete	~
Aug 23, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 23, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 22, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 22, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 21, 2021 00:00	Michael Weaver	Complete	~
Aug 21, 2021 00:00	Michael Weaver	Complete	~
Aug 20, 2021 00:00	Michael Weaver	Complete	~
Aug 20, 2021 00:00	Michael Weaver	Complete	~
Aug 19, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 19, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 18, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 18, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 17, 2021 00:00	Michael Weaver	Complete	~
Aug 17, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 16, 2021 00:00	Kathryn Harding	Complete	~
Aug 16, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 15, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 15, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 14, 2021 00:00	Michael Weaver	Complete	~
Aug 14, 2021 00:00	Michael Weaver	Complete	~
Aug 13, 2021 00:00	Michael Weaver	Complete	~
Aug 13, 2021 00:00	Michael Weaver	Complete	~
Aug 12, 2021 00:00	Michael Weaver	Complete	~
Aug 12, 2021 00:00	Michael Weaver	Complete	~
Aug 11, 2021 00:00	Michael Weaver	Complete	~
Aug 11, 2021 00:00	Michael Weaver	Complete	~
Aug 10, 2021 00:00	Michael Weaver	Complete	~
Aug 10, 2021 00:00	Michael Weaver	Complete	~
Aug 09, 2021 00:00	Kathryn Harding	Complete	~
Aug 09, 2021 00:00	Kathryn Harding	Complete	~
Aug 08, 2021 00:00	Kathryn Harding	Complete	~
Aug 08, 2021 00:00	Kathryn Harding	Complete	~
Aug 07, 2021 00:00	Michael Weaver	Complete	~
Aug 07, 2021 00:00	Michael Weaver	Complete	~
Aug 06, 2021 00:00	Michael Weaver	Complete	~
Aug 06, 2021 00:00	Michael Weaver	Complete	~
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~

Aug 04, 2021

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date	Time	Note Author
Aug 04, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Cryotherapy and nail trim.  
Patient laid in lateral recumbency for procedure.  
Keepers report no improvement or decline from yesterday.

**Objective**

D5 on the right front - the nail is very loose at the bottom and can see black necrotic debris underneath the nail. Trimmed nail edge back along the ventral medial edge. Found some black necrotic tissue that was malodorous. Probed with a red rubber catheter tip - extends approximately 1.5 cm underneath the nail face along the middle of the nail. Unable to determine if is migrating further lateral along the nail as it was painful to patient. Stopped.  
D2 of the left front - no significant change to the lesion. Same size and shape at this time.

**Assessment**

D5 left front - increased in size

**Plan**

Trimmed the nail edge with hoofknife and nippers. Filed smooth. Used a #10 scalpel blade to remove some necrotic tissue edges.  
Cryotherapy performed to both feet - two freeze/thaw cycles obtained. Flushed all pockets with betadine on both feet.  
More gentamicin:excede mixture dispensed this morning for application.  
To monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Aug 03, 2021	Date	Aug 03, 2021
Start Date	Aug 04, 2021 00:00	Measurement Value	2,726 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

2,726 mg

Frequency

every 2 days (q2d)

Form of Drug

Tablet

Dosage Amount

1 mg/kg

Duration

5doses

Concentration Of Drug

800 mg

Administrated Dose Quantity

3.408 count

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

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Adverse Effects Note:

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Staff Instructions

Give 3.5 tablets crushed, mixed with water until dissolved and instilled into the rectum every other day for 5 doses. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Aug 12, 2021	5 / Asian elephant / MIG12-29545888 Gabapentin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 28, 2021 00:00	Michael Weaver	70%	~
Aug 27, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 26, 2021 00:00	Kathryn Harding	Complete	switch to SID
Aug 25, 2021 00:00	Karen Veary-Santos	50%	~
Aug 23, 2021 00:00	Karen Veary-Santos	50%	~
Aug 21, 2021 00:00	Michael Weaver	50%	~
Aug 19, 2021 00:00	Karen Veary-Santos	50%	~
Aug 17, 2021 00:00	Karen Veary-Santos	70%	~
Aug 15, 2021 00:00	Karen Veary-Santos	70%	~
Aug 13, 2021 00:00	Michael Weaver	Complete	~
Aug 11, 2021 00:00	Michael Weaver	70%	~
Aug 09, 2021 00:00	Michael Weaver	90%	~
Aug 07, 2021 00:00	Michael Weaver	20%	switched to EOD
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 04, 2021 00:00	Karen Veary-Santos	90%	~

Aug 03, 2021

Clinical note

Date

Aug 03, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Subjective

Cryotherapy.  
Per keepers, feel she is moving around a better today but still very deliberate with foot placement. She has been seen resting it in a way that the left front digits 1 and 2 are off the ground and the weight is on the lateral half of the foot. Taking meds well.  
Ice bathe and medicated foot soaks are still being performed twice daily together for 20-25 minutes. Patient seems to really enjoy them as she is unwilling to come out of them.

Objective

The lesion appears to have increased again over D3 on the left front. More prominent crabmeat tissue along the dorsal half of the phalanges.  
The lesion appears to have increased in size and depth on the right front D5. The nail is starting to bow out at the bottom and the cuticle is separating along the medial half. Very sensitive to the touch around this nail and the proliferative white crabmeat as well as the necrotic tissue seen under the nail. Strong odor and moisture present at both sites.  
The pad is very soft along the plantar aspect of both front feet and seems to be more prominent.

Assessment

both lesions have increased.

Plan

Patient was in lateral recumbency for cryotherapy and topical treatments today.  
There was some necrotic tissue hanging from both lesions that was trimmed with a #10 scalpel blade.  
Cryotherapy performed with firm pressure and for an extended period to the left front D2/D3 lesion everywhere but over the pink pedunculated tissue. Two freeze/thaw cycles obtained.  
No cryotherapy performed to the right front D5 today as still very sensitive.  
To try to increase the cryotherapy sessions to 4-5 times weekly with more firm pressure and longer contact time, depending on how sore patient may become. Will constantly be discussing daily to hourly depending on how patient is doing at any given time. Plan to take more radiographs later this week.  
To continue the gabapentin as keepers have not observed any sedation with this patient and think it is helping. May still add in tramadol if we feel that pain is still not improving.  
Recommend decrease foot soakings from 20-25 minutes to 15 minutes to help prevent too much softening of the pad occurring.

Culture results show three different types of organisms. All three with a varying range of sensitivities. Enrofloxacin appears to be adequate for two of them and topical excede:gentamicin should be adequate to help with the last organism.

To date, have consulted with nine different zoo veterinarians with extensive elephant knowledge and continuing to consult with some of them on a daily basis. Also consulted with multiple different elephant keepers at other institutions who have experience with this type of lesion. And consulted with one elephant pododermatitis expert, who comes out every 4-8 weeks depending on current patient status.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Aug 01, 2021

Clinical note

Date	Time	Note Author
Aug 01, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Assessment.  
Keepers report that patient is really enjoying her ice bathes twice day for 20 minutes. Combined the foot soakings and the ice bathe at the same time.  
Taking medications well rectally - have noticed an increase in the length of time when sleeping.  
She is still receiving stall rest for now and walking slowly and deliberately. Eating well.

Objective

Patient is BAR. Actively engaged in the session.  
Left front, digit 2:  
The lesion extends dorsally from the medial second digit to the middle third digit. 13 cm in length and 18 cm wide. There is a loose curled piece of skin that is attached still on the lateral side of digit 3. There is a large amount of white crabmeat underdeath a tan, thin membrane where is has grown so rapidly. The venral portion along the bottom is pink and pedunculated today with a thin white fibrin like layer. The previous biopsy site is not seen. It extends 10 cm outside of the plane of the foot. There is a crescent shaped necrotic, pink and white section of tissue underneath the nail, curving under the pedunculated tissue and between this and the slipper. Probing with a red rubber catheter tip show the side adjacent to the third digit extends about 4 cm internally along the wall. Unable to get the red rubber catheter under the lesion along the slipper in several locations but where could, it is approximately 1 cm in depth. Under the nail it was difficult to get it into the channels previousl used but able to along both sides of the necrotic tissue, slipper margin and pedunculated tissue. The nail edge is still attached and seems to be flexing. The slipper to skin margin between digits 1 and 2 still has a 1 cm depth but no inflammation at this time. The tissue is very moist in general, soft and squishy except along the pink pedunculated area and directly over the lateral aspect of it which is hard.  
Right front, digit 5:  
The lesion is now more crescent then triangular in shape and is 4.5 cm at it longest, flat edge from the nail edge to the pad. It is 3.5 cm in length to the edge of the slipper and curls around along the slipper edge about 2 cm. The tissue is white to grey and mostly crabmeat like. She still had a hard time holding this foot up for any length of time. There is some black necrotic tissue along the medial point on the pad that is 2 cm in size.

Assessment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Proliferative pododermatitis - increased in size and depth on the left front and slight increase on the right front.

Plan

No trimming or cryotherapy at this time.  
To continue with stall rest for today.  
Flushed all pockets with betadine using the red rubber catheter.  
When finished, she immediately threw dirt on it.  
To continue to monitor closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 29, 2021

Clinical note

Date	Time	Note	Author
Jul 29, 2021	00:00		Erica Lipanovich
Significant	Private	Active Problems	
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5	

Subjective

Cryotherapy and debridement.  
This patient laid in left lateral recumbency.  
Rested comfortably during the treatments and laid resting afterwards.

Objective

The ventral pink pedunculated tissue seems more enlarged along the lateral margin of the third digit. The necrotic tissue under the nail and extending along the slipper margin seems slightly larger as well.  
The biopsy site does not appear inflamed and has smooth margins along with the rest of the pedunculated tissue. The white crabmeat like proliferative tissue along the dorsal half of the lesion is approximately 2.5 cm in height. The dorsal 3 cm rim along the upper area has a shorter appearance, grey to white in coloration and very soft to squishy in texture. Triangular section of skin adjacent to the third digit was loose and patient did not respond when manipulated.  
The slipper margin along the lateral edge between digits 1 and 2 has a 1 cm lip present. The triangular section of skin is now reattached that was above this area.  
Digit 5 on the right front is stable and no change appreciated.

Assessment

left front lesion - pedunculated tissue has increased in size and depth.

Plan

Using a #10 scalpel blade, removed approximately 2 cm of the crabmeat tissue where applicable along the middle area and scraped several millimeters of grey necrotic tissue off the top. Removed the loose skin adjacent to digit 3 with no response. Noted there was a concommittal section of dry, flaky almost, crabmeat-like section underneath this. Removed about a 2 cm triangular shaped area of tissue and about 1 cm deep. The necrotic tissue under the nail and along the slipper margin was trimmend. Mild amount of bleeding in a few places. No tissue hanging down any longer.  
Cryotherapy with metal performed to the dorsal 2/3rd and the necrotic tissue only.  
Coated the entire lesion with betadine including underneath the nail and in all crevices with a red rubber catheter.  
Blood was collected from staff post treatment for CBC/Biochemistry and APP.

Metronidazole arrived. To dose at 15 mg/kg rectally once daily. 40.6 gm of powder (2 scoops of marked container). Mix with water and instill rectally.  
Stall rest for the next few days to encourage resting and try to get the proliferative tissue to stop growing since it is stimulated by too much movement.  
Concerned this is not done. Consulting with an additional veterinarian.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Jul 29, 2021

Start Date

Jul 29, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jul 29, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Metronidazole

Dose Amount

40,890 mg

Dosage Amount

15 mg/kg

Administrated Dose Quantity

40,890 mg

Frequency

once a day (sid)

Duration

14days

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug ~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 40.9 gm (2 marked scoops) of metronidazole rectally once daily for 14 days. Mix with water after emptying the colon of fecal material. Instill as far cranially as possible.

Prescription Notes/Comments

40.9 gm

Calendar Items

Date	Title	Assigned To	Done
Aug 11, 2021	5 / Asian elephant / MIG12-29545888 Metronidazole treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 07, 2021 00:00	Karen Veary-Santos	20%	switched to EOD
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 04, 2021 00:00	Karen Veary-Santos	20%	~
Aug 03, 2021 00:00	Michael Weaver	50%	~
Aug 02, 2021 00:00	Karen Veary-Santos	20%	~
Aug 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 31, 2021 00:00	Michael Weaver	50%	~
Jul 30, 2021 00:00	Michael Weaver	Complete	~

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Jul 29, 2021 00:00

Sample Type

Tissue

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 29, 2021	~/~	Available	ANTECHUSA/3/3

Notes

Swab from foot lesion

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Jul 29, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Collection Method

Phlebotomy

Collected By

Karen Veary-Santos

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

Turbid/Cloudy

Additional Characteristics

hemolysis

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 29, 2021	~/~	Available	UMAWLAB/36/35

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Sample Type

Anatomical Source/Tissue

Additives/Preservatives

Collection Method

Collected By

Reason

Exclude from reference intervals

Jul 29, 2021 00:00

Whole Blood

~

EDTA

Phlebotomy

Karen Veary-Santos

~

No

Sample Quality

Additional Characteristics

Degraded

~

No

Pre-Sampling Conditions

Fasting Duration

Restraint Type

Activity

< 2 hours

Physical

Low activity

Initial Holding Conditions

Initial Holding Temp.

Initial Holding Duration

~

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 29, 2021	~/~	Available	UMAWLAB/22/21

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Requested By

Laboratory

Analysis Start Date

Analysis Equipment

Insufficient Sample

Jul 29, 2021

Erica Lipanovich

ANTECHUSA

~

~

No

Sample Quality

Color

Color Intensity

Clarity

Consistency

Additional Characteristics

Degraded

~

~

~

~

~

No

Notes/Comments

TEST

K A C

Results

ADULT REFERENCE RANGE

Cephalothin	R	R	R		
AMIKACIN	S	S	S		
AMPICILLIN	R	R	R		
CHLORAMPHENICOL	R	S	S		
CLAVAMOX	R	R	R		
DOXYCYCLINE	R	R	R		
ENROFLOXACIN	R	S	S		
GENTAMICIN	S	S	R		
Marbofloxacin	S	S	S		
Neomycin	S	S	S		
TETRACYCLINE	R	R	R		
TMP / SULFA	R	R	R		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Aerobic Culture	Taxon Result - Klebsiella pneumoniae / K. pneumoniae		~	~	~	No
Secondary Result	heavy growth					
Aerobic Culture	Taxon Result - Aeromonas / Aeromonas		~	~	~	No
Secondary Result	heavy growth					
Aerobic Culture	Taxon Result - Citrobacter / Citrobacter		~	~	~	No
Secondary Result	heavy growth					

Sample Detail (GSN: S-PGW21-005856)			
Collection Date/Time	Jul 29, 2021 00:00	Collection Method	~
Sample Type	Tissue	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result

Test Request Detail		Sample Quality	
Date Requested	Jul 29, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	UMAWLAB	Clarity	Turbid/Cloudy
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	hemolysis
Insufficient Sample	No	Degraded	No

Notes/Comments	
Capillary Zone Electrophoresis Verified on: 07/30/21 Test Name Level Intervals % Level Total Protein g/dl 8.4 -- 6.5 - 8.9 A/G ratio 0.57 -- 0.49 - 0.96 Pre Albumin g/dL 0.24 -- 0.19 - 0.31 2.9 Albumin g/dL 2.82 -- 2.51 - 3.38 33.6 Alpha 1 g/dL 0.08 -- 0.05 - 0.13 1.0 Alpha 2 g/dL 1.36 -- 0.64 - 1.45 16.2 Beta 1 g/dL 0.76 -- 0.53 - 0.93 9.1 Beta 2 g/dL 1.37 -- 0.75 - 1.61 16.3 Beta total g/dL 2.13 -- 1.30 - 2.44 25.4 Gamma g/dL 1.76 -- 0.77 - 2.06 20.9 Case No: 21-21467 - Elephant, Ruth #5 Page 2 of 4 Method change to capillary zone EPH from agarose gel EPH for mammalian species on 9/1/20. Additional species will be added throughout 2020. EPH Interpretation The total protein and A/G ratio are normal for this species. No globulinopathies are present. This EPH does not support the presence of inflammation or infection. Acute Phase Protein Verified on: 07/30/21 Test Level Comment Range Low Range High Units of Measure Serum amyloid A 149.5 HI 0 42.5 mg/L SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process. Haptoglobin 4.45 HI 0 1.1 mg/ml As in other species, HP is a minor APP in elephants. Two to three fold increases in this APP have been observed in clinically abnormal elephants. To date, the highest observed value in our laboratory has been 9mg/ml. In most species, HP is believed to be a preferred marker of chronic inflammation. In contrast to CRP and SAA, the increase in HP is delayed 4-6 days after stimulus and its expression is prolonged. As with other APP, repeated measures should have prognostic value.	

Test Requests & Test Results	
~~~~~	

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
A:G ratio	0.57 ratio	Global sp RI: 0.1 - 1.0   0.7 [0.7] N=2104 (121)	~	No	No	No
Pre-albumin EPH	0.24 g/dL	Global sp RI: 0.00 - 0.42   0.08 [0.00] N=92 (19)	~	No	No	No
Albumin EPH	2.82 g/dL	Global sp RI: 2.46 - 4.48   3.29 [3.21] N=193 (44)	~	No	No	No
α-1 Globulin EPH	0.08 g/dL	Global sp RI: 0.07 - 1.10   0.63 [0.68] N=188 (40)	~	No	No	No
α-2 Globulin EPH	1.36 g/dL	Global sp RI: 0.31 - 1.15   0.65 [0.60] N=191 (39)	High	No	No	No
β-1+2 Globulin EPH	2.13 g/dL	Global sp RI: 0.56 - 2.93   1.52 [1.40] N=101 (30)	~	No	No	No
γ Globulin EPH	1.76 g/dL	Global sp RI: 0.31 - 3.33   1.74 [1.70] N=172 (40)	~	No	~	No
Serum Amyloid A	149.5 mg/L	Global sp RI: 0.1 - 129.9   13.9 [2.2] N=40 (21)	High	No	~	No
Haptoglobin	4.45 mg/ml	Global sp RI: 0.06 - 4.07   1.22 [1.14] N=73 (22)	High	No	~	No
β-1 Globulin EPH	0.76 g/dL	Global sp RI: 0.05 - 2.99   1.24 [1.10] N=110 (28)	~	No	~	No
β-2 Globulin EPH	1.37 g/dL	Global sp RI: 0.07 - 1.65   0.81 [0.87] N=45 (19)	~	No	~	No
Glucose	66 mg/dL	Global sp RI: 51 - 123   83 [83] N=4113 (183)	~	No	No	No
BUN	13 mg/dL	Not calculated	~	~	~	No
Creatinine	1.3 mg/dL	Global sp RI: 0.7 - 2.0   1.3 [1.3] N=4030 (195)	~	No	No	No
BUN/Creat ratio [c]	~ ratio	Global sp RI: 14.1 - 65.4   35.0 [33.5] N=3047 (153)	~	No	No	~
Na	130 mmol/L	Global sp RI: 124 - 138   130 [130] N=3864 (190)	~	No	No	No
K	4.9 mmol/L	Global sp RI: 3.8 - 5.7   4.6 [4.5] N=3839 (189)	~	No	No	No
Chloride	91 mmol/L	Global sp RI: 84 - 100   91 [90] N=3668 (171)	~	No	No	No
Mg	2.8 mg/dL	Global sp RI: 1.60 - 3.00   2.21 [2.20] N=1429 (105)	~	No	No	No
Ca	9.8 mg/dL	Global sp RI: 9.1 - 12.0   10.5 [10.5] N=4176 (201)	~	No	No	No
Phos	4.2 mg/dL	Global sp RI: 3.1 - 7.5   4.9 [4.8] N=3946 (192)	~	No	No	No
Ca:Phos ratio	2.3 ratio	Global sp RI: 1.4 - 3.1   2.0 [1.9] N=576 (25)	~	No	No	No
Total CO2	19 mmol/L	Global sp RI: 18.0 - 30.0   24.4 [25.0] N=1438 (118)	~	No	~	No
Amylase	1,945 U/L	Global sp RI: 70 - 12,127   4,581 [4,350] N=856 (122)	~	No	No	No
Lipase	10 U/L	Global sp RI: 1 - 40   14 [10] N=483 (79)	~	No	No	No
Cholesterol	<50 mg/dL	Global sp RI: 18 - 68   43 [43] N=2481 (170)	~	No	No	No
Uric Acid	<0.5 mg/dL	Global sp RI: 0.0 - 1.0   0.2 [0.1] N=553 (68)	~	No	No	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Total Protein	8.4 g/dL	Global sp RI: 6.5 - 9.6   8.0 [8.0] N=4296 (188)	~	No	No	No
Albumin unspecified	3.3 g/dL	Not calculated	~	~	~	No
AST	21 U/L	Global sp RI: 6 - 37   18 [16] N=3545 (188)	~	No	No	No
ALT	<4 U/L	Global sp RI: 0 - 21   6 [4] N=2415 (170)	~	No	No	No
LDH	1,097 U/L	Global sp RI: 150 - 1,117   420 [349] N=1078 (129)	~	No	No	No
Creatine Kinase	472 U/L	Global sp RI: 53 - 492   171 [138] N=2985 (180)	~	No	No	No
GGT	8 U/L	Global sp RI: 0 - 14   5 [5] N=2774 (161)	~	No	No	No
Tot. Bili.	0.2 mg/dL	Global sp RI: 0.0 - 0.5   0.2 [0.2] N=3797 (185)	~	No	No	No
Conj./Direct Bili.	0.2 mg/dL	Global sp RI: 0.1 - 0.1   0.1 [0.1] N=500 (73)	High	No	No	No

Sample Detail (GSN: S-PGW21-005838)			
Collection Date/Time	Jul 29, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Serum	Collected By	Karen Veary-Santos
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result			
Test Request Detail		Sample Quality	
Date Requested	Jul 29, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	UMAWLAB	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Notes/Comments

CBC Verified on: 07/30/21  
Test Name Level Intervals % Level % Intervals  
White Blood Cell Count x 103/ $\mu$ l 10.7  
Red Blood Cell Count x 106/ $\mu$ l 2.63  
Hemoglobin g/dL 10.30  
Hematocrit % 33.8  
MCV fL 129  
MCH pg 39  
MCHC % 30  
Segmented Neutrophils Abs x 103/ $\mu$ l 2.68 25  
Band Neutrophils Abs x 103/ $\mu$ l 0.64 6  
Lymphocytes Abs. x 103/ $\mu$ l 1.82 17  
Monocytes Abs. x 103/ $\mu$ l 5.46 51  
Eosinophils Abs. x 103/ $\mu$ l 0.11 1  
Basophils Abs. x 103/ $\mu$ l 0.00 0  
NRBC  
RBC Morphology see comment  
...Anisocytosis [1+ ]  
...Target Cells [1+ ]  
Platelet Count (auto) x 103/ $\mu$ l 313  
Platelet Morphology Normal  
WBC Morphology see comment...Reactive monocytes [Few ]  
Platelet count (estimated) Verified on: 07/30/21  
Test Level Comment Range Low Range High Units of Measure  
Platelet count (est) 675 x 103/ $\mu$ l  
Gen: Due to small platelet size in elephants, the automated platelet count may not be accurate and thus a manual platelet estimate is provided.

Fibrinogen Verified on: 07/30/21  
Test Level Comment Range Low Range High Units of Measure  
Fibrinogen 400 mg/dL

UM Large Animal Panel Plus Verified on: 07/30/21  
Test Level Comment Range Low Range High Units of Measure  
Hemolysis Index 1 HI 0 0  
The sample is hemolyzed. Hemolysis is scored on a 0-4 scale where 4 is considered severe. Increasing levels of hemolysis will potentially artifactually increase results for the following analytes: potassium, phosphorus, CK, LDH, and AST. Uric acid, GGT, and lipase levels may decrease with severe hemolysis.  
Lipemia Index 1 LI 0 0  
The sample was lipemic. The score reflects the degree of lipemia graded on a 0-4 scale where 4 is severe. Sample lipemia can artifactually increase total protein values when performed by refractometer methodology. The other analytes are generally not affected by this sample condition.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

### Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Est. WBC count	10.7 *10^3 cells/μL	Global sp RI: 0 - 19   8 [7] N=136 (23)	~	No	~	No
RBC [a]	2.63 *10^6 cells/μL	Global sp RI: 2.15 - 3.80   2.84 [2.79] N=5580 (197)	~	No	No	No
HGB [a]	10.3 g/dL	Global sp RI: 8.9 - 16.5   12.2 [12.1] N=6199 (212)	~	No	No	No
HCT [a]	33.8 %	Global sp RI: 24.2 - 47.3   34.7 [34.3] N=5507 (194)	~	No	No	No
MCV	129 fL	Global sp RI: 94.8 - 145.0   119.8 [121.1] N=2307 (113)	~	No	No	No
MCHC [c]	304.73 g/L	Global sp RI: 303 - 400   353 [353] N=3676 (155)	~	No	No	No
Neutrophil count [m]	2.68 *10^3 cells/μL	Global sp RI: 0.00 - 9.65   4.01 [3.57] N=108 (21)	~	No	No	No
Neutrophil % [m]	25 %	Global sp RI: 7.6 - 72.0   32.3 [29.0] N=3986 (172)	~	No	No	No
Band count [m]	0.64 *10^3 cells/μL	Basic Stats: ~ - ~   0.98 [0.00] N=25 (7)	~	No	~	No
Band % [m]	6 %	Global sp RI: 0.0 - 6.0   0.9 [0.0] N=1474 (141)	~	No	No	No
Lymphocyte count [m]	1.82 *10^3 cells/μL	Global sp RI: 0.00 - 9.31   3.39 [3.06] N=133 (23)	~	No	No	No
Lymphocyte % [m]	17 %	Global sp RI: 8.0 - 72.0   33.1 [30.0] N=4291 (186)	~	No	No	No
Monocyte count [m]	5.46 *10^3 cells/μL	Global sp RI: 0.001 - 10.646   5.283 [5.790] N=108 (21)	~	No	No	No
Monocyte % [m]	51 %	Global sp RI: 1.0 - 64.1   29.6 [31.0] N=4075 (185)	~	No	No	No
Eosinophil count [m]	0.11 *10^3 cells/μL	Global sp RI: 0.000 - 0.656   0.171 [0.128] N=95 (18)	~	No	No	No
Eosinophil % [m]	1 %	Global sp RI: 0.0 - 9.3   2.5 [2.0] N=3328 (175)	~	No	No	No
Basophil count [m]	0 *10^3 cells/μL	Global sp RI: 0.000 - 0.094   0.003 [0.000] N=85 (15)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 2.0   0.2 [0.0] N=1982 (141)	~	No	No	No
nRBC's [m]	~ /100 WBC	Global sp RI: 0 - 3   1 [1] N=50 (15)	~	No	~	~
Polychromasia	rare (1+)		~	~	~	No
Anisocytosis	rare (1+)		~	~	~	No
Est. Platelets	675 x 103/ul; normal		~	~	~	No

Sample Detail (GSN: S-PGW21-005839)

Collection Date/Time	Jul 29, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Whole Blood	Collected By	Karen Veary-Santos
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	EDTA	Exclude from reference intervals	No

Jul 28, 2021

Prescription/Treatment
<p>1. <b>First-line treatment:</b> A combination of a <b>beta-blocker</b> (e.g., metoprolol) and a <b>calcium channel blocker</b> (e.g., amlodipine) is often used to manage hypertension in patients with aortic stenosis. These medications help reduce the workload on the heart and lower blood pressure.</p> <p>2. <b>Diuretics:</b> Medications like furosemide may be prescribed to manage fluid overload and prevent heart failure symptoms.</p> <p>3. <b>Statins:</b> These are used to manage cholesterol levels and reduce the risk of cardiovascular events.</p> <p>4. <b>Anticoagulants:</b> If there is a risk of blood clots, anticoagulants like warfarin or direct oral anticoagulants (DOACs) may be prescribed.</p> <p>5. <b>Heart failure medications:</b> If heart failure develops, medications like ACE inhibitors or ARBs, and possibly digoxin, may be added to the regimen.</p> <p>6. <b>Transcatheter Aortic Valve Replacement (TAVI):</b> For severe aortic stenosis, TAVI is a minimally invasive procedure to replace the aortic valve. It is often preferred over surgical aortic valve replacement (AVR) for high-risk patients.</p> <p>7. <b>Surgical Aortic Valve Replacement (AVR):</b> In cases where TAVI is not suitable, surgical AVR may be necessary to replace the stenotic valve with a mechanical or biological valve.</p> <p>8. <b>Regular Monitoring:</b> Patients with aortic stenosis require regular echocardiograms to monitor the progression of the valve disease and the effectiveness of the treatment.</p>

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Jul 28, 2021

Start Date

Jul 28, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jul 28, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Gabapentin (800 mg Solid > Tablet) (Gabapentin)

Dose Amount

2,726 mg

Frequency

once a day (sid)

Form of Drug

Tablet

Dosage Amount

1 mg/kg

Duration

5days

Concentration Of Drug

800 mg

Administrated Dose Quantity

3.408 count

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3.5 tablets crushed, mixed with water until dissolved and instilled into the rectum once daily for 5 days. Monitor for sedation.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 03, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 02, 2021 00:00	Joseph Golden	70%	~
Aug 01, 2021 00:00	Karen Veary-Santos	70%	~
Jul 31, 2021 00:00	Michael Weaver	Complete	~
Jul 30, 2021 00:00	Michael Weaver	Complete	~

Jul 27, 2021

Clinical note

Date

Jul 27, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

☒ RADIOGRAPHS

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Subjective

Biopsy with recheck rads.  
She had an ice bathe of 20 minutes to the left front that patient really seemed to enjoy and didn't want to step out of prior to evaluation this morning.  
Keeper reports that it does not appear that she laid down overnight.  
Eating well but minimally ambulating still. When she does, very deliberate and careful with how she places her left front.  
This patient was asked to lay in left lateral recumbency for treatment.

Objective

Left front, digit 2 seems grossly enlarged still. There is now skin peeling along the medial aspect of the nail edge going along the slipper edge in a triangle shape. Approximately 8 cm in length and 5 cm in height. There is necrotic tissue visible underneath that seems painful to the touch. It is still attached along the lateral edges but it loose along the dorsal and ventral edges and can see black necrotic tissue underneath. The necrotic tissue underneath the nail has increased in size and is now going underneath the pink/white pedunculated tissue along the slipper margin. There is now a tract that goes approximately 3 cm in underneath that tissue along to the middle of the pedunculated tissue. The pedunculated tissue has not changed. The crabmeat tissue along the dorsal 2/3rd of the lesion is approximately 4 cm in length at its tallest. The lateral edge of the dorsal lesion that is over the third digit is grey in coloration, painful and very moist. There is a 3.5 cm section of dried skin that is loosely attached along the medial nail margin that is painful to manipulation and becoming necrotic.  
Left front, digit 3 - the nail is cracked along the ventral medial edge approximately 1 cm. No soft tissue swelling at this time.  
Right front, digit 5 - the lesion 6 cm extending from the middle of the nail around to the lateral edge of the nail and slipper up to the base of the cuticle 1.5 cm. The skin is curled out around the lateral edge of the nail around the cuticle. It is triangular in shape with the base along the nail and pointing rostrally with the widest being 2.5 cm. The tissue is white in appearance with a 1 cm necrotic corner around the middle of the nail. Moderately painful to palpation.

Assessment

severe progression of proliferative lesion with secondary effects to digits 1 and 3 from digit 2 on the left front with secondary absorption/lysis of P3  
progression of proliferative lesion on the right front, digit 5 - secondary to progression on the left front

Plan

Ice applied topically throughout the vet procedure.  
Radiographs taken of left front, digits 1,2 ,3.  
Surgically prepped the pedunculated lesion. Local anesthetic administered with a 25 gauge needle of epinephrine, lidocaine and sodium bicarbonate to the 1.5 cm circular lesion in the middle of the pink pedunculated tissue. Minimal bleeding occured when used a #10 scalpel blade to remove the tissue. Patient did great. Didn't respond to the cut with the scalpel but did resent the pressure very slightly to the lesion. Biopsy section sent to U of Florida in formalin. Rule out SCC.  
Cryotherapy performed to the necrotic tissue underneath the nail and around the upper 1/2 of the white crabmeat tissue. Some of the crabmeat was trimmed with a #10 scalpel blade and then cryotherapy performed again. Very sensitive around the skin edges over D3.  
Betadine placed around the necrotic section of tissue behind the nail, under the pedunculated tissue and around all significant crevices of the lesion. Also topically applied to the dermal necrotic tissue between digits 1 and 2 under the skin. Topically applied to right front proliferative lesion as well.  
Released and patient stayed laying down resting. Did not encourage her to get up as she seemed comfortable.  
Keepers to apply gentamicin:excede mixture tonight since cryotherapy was performed as well as biopsy.

Keepers report that she didn't do a lot of walking throughout the day and stayed around the barn. Requested an assessment be performed with upper management.  
Requested staff collect a swab of the foot lesion first thing in the morning prior to any foot soakings for aerobic C/S. Also requested a blood sample to send out to U of Miami for acute phase proteins and fibrinogen. Inhouse CBC and biochemistry to be performed.  
To start metronidazole when it arrives rectally as well as to discuss with staff addition of gabapentin (range is 0.5-2 mg/kg SID to BID rectally - recommend starting at 1 mg/kg SID initially).  
Recommend continue icing twice daily for atleast 20 minutes. Pads are to be laid in areas that she likes to stand to help assist the footing to be more flat and even.  
Contacted consultants to review current status and any suggestions that could be made.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Procedure

RADIOGRAPHS

Onset Date

Jul 27, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Jul 27, 2021 00:00

Notes/Comments

Left front, digit 2 - P3 is difficult to get visualization. Less dense, rotated medially and possible pushed dorsally of P2. Concerned with developing osteomyelitis and/or resorption of the bone. The soft tissue density is grossly enlarged. There is a change in bone density present to the distal P2 but could be in relation to the soft tissue density. There is no evidence of cortical changes present at this time. Digit 3 is also being pushed laterally at the nail and the tissue is appearing to shift laterally. The bone cortices appears normal at this time and alignment is good. Nail is visibly cracked.

Sample

Sample Detail

Collection Date/Time

Jul 27, 2021 00:00

Sample Type

Tissue

Anatomical Source/Tissue

Left front digit 2

Additives/Preservatives

Formalin, 10% buffered

Collection Method

Sharp dissection / cut off a piece

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 27, 2021	~/~	Available	UFLVDL/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Jul 27, 2021

Requested By

Erica Lipanovich

Laboratory

UFLVDL

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Notes/Comments

FINAL ANATOMIC OR ETIOLOGIC DIAGNOSIS:  
Pododermatitis, ulcerative, heterophilic (neutrophilic), histiocytic, chronic, active, 1. diffuse, moderate to marked.

COMMENTS: The examined sections are consistent with the clinical suspicion of pododermatitis. The sections are diffusely ulcerated with a dense bed of well organized granulation tissue. Inflammation and ulceration extend to section borders. No significant microorganisms are detected with H&E, GMS, or Gram stains. No evidence of neoplasia is detected in the examined sections.

SAMPLE SUBMITTED: Proliferative pododermatitis lesion biopsy

GROSS DESCRIPTION: Received in a container of formalin solution labeled with patient information is an approx. 23 x 15 x 7 mm, firm, tan, irregular tissue. Representative longitudinal sections and orthogonal sections are submitted in cassette 1. Some tissue remains in the container.

MICROSCOPIC DESCRIPTION:  
SLIDE 1 Skin (4 sections)

The dermis is expanded by a dense bed of perpendicularly oriented blood vessels and bands of connective tissue (granulation tissue) admixed with high numbers of heterophils (neutrophils) and variably-vacuolated macrophages. Heterophils and macrophages are more densely aggregated along the superficial margins of the biopsies, variably extending down into the granulation tissue within the dermis. Dermal fibroblasts are plump and reactive and vessels are prominent and lined by plump endothelial cells (hypertrophy). Inflammatory infiltrates extend to section borders. The epidermis is diffusely ulcerated in all sections. The ulcer bed is composed of numerous heterophils; fewer macrophages, lymphocytes, and plasma cells; amorphous to homogenous, eosinophilic debris; karyorrhectic debris, and fibrin.

SPECIAL STAINS  
GMS, SLIDE 1: No fungal elements are present in the examined sections.  
Gram, SLIDE 1: Low numbers of mixed morphology bacteria are present along the ulcerated surface.  
Robert Ossiboff, DVM, PhD, Diplomate ACVP

Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Microscopic findings	Proliferative pododermatitis lesion biopsy		~	~	~	No

Sample Detail (GSN: S-PGW21-005831)

Collection Date/Time	Jul 27, 2021 00:00	Collection Method	Sharp dissection / cut off a piece
Sample Type	Tissue	Collected By	Erica Lipanovich
Anatomical Source/Tissue	Left front digit 2	Reason	~
Additives/Preservatives	Formalin, 10% buffered	Exclude from reference intervals	No

Jul 26, 2021

Clinical note

Date	Time	Note Author
Jul 26, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

Subjective

Update.  
Keeper reports that this patient is still moving very deliberately and gently on the left front foot.  
Was nonpainful when she hosed the foot off in the morning but is very painful on the uneven surfaces.  
Contacted several specialists and communicated with one specialist who suggested adding in cold hydrotherapy +/- ice if the patient would allow it.  
Continued the DMSO/dexamethasone topically application to the left front carpus as well as to the pedunculated tissue.  
To try to get radiographs done tomorrow as well as biopsy.  
Recommend an assessment meeting as this patient seems to have declined.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 25, 2021

Clinical note

Date	Time	Note Author
Jul 25, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Recheck.  
Keeper reports that she is still moving very slowly and deliberately.  
Patient is taking her meds well still and is still going outside and walking without much asking but very very slow and deliberate with her steps.

**Objective**

Assessment of the second digit on left front:  
15 cm wide and 13 cm in length. The proliferative, crabmeat like tissue is 2.5 cm in height again. There is a rounded section extending over the third digit still. The skin around the medial digit 3 nail is uncomfortable. The ventral portion of the growth, out of the digit area that is adjacent to the third digit, is larger, pink with a white fibrin film over it, and becoming pedunculated. There is a 2 cm diameter by 1.5 cm high, central raised section within this pink section that seems to be the most uncomfortable. The nail that is still attached along the medial edge is being deviated slightly out and down from the proliferative tissue along the top. The slipper edge has some necrotic tissue along the border of about 1-3 cm. There is some loose necrotic tissue behind the nail that has a channel all the way around it. This tissue seems more proliferative but is not touching the ground.

Assessment of the fifth digit on the right front:  
No appreciable change in size or shape to the lesion. The leg is still shaking when lifted so examined very very quickly. Unable to get measurements at this time.

**Assessment**

increased growth in tissue.  
significant discomfort - probably causing some carpal changes to the left front leg due to how she is having to shift her weight around to avoid the growth on the digit.  
serious concerns with the bone alignment of the left front digit due to the significant increase in size of the mass.

**Plan**

Need to schedule radiographs for this week and to try to trim some of the necrotic tissue out to prevent infection.  
Consulting with specialists to see what other options there may be.  
Able to insert the red rubber catheter behind the nail for flushing of the area with betadine (10%). Successful and with minimal discomfort to patient.  
Applied DMSO gel to the pedunculated pink tissue. To do DMSO and dexamethasone spray to the left front carpal joint and DMSO gel with dexamethasone to the ventral pink section at the end of the day.  
To have discussion with staff.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 24, 2021

Clinical note

Date	Time	Note Author
Jul 24, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Update.  
Keepers report that this patient is moving very slowly and deliberately on the left front foot, especially after the last cryotherapy.  
To grade the yard and the stall more flat for her and see how she does.  
No cryotherapy today.  
To evaluate her tomorrow.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 22, 2021

Clinical note

DateTimeNote Author

Jul 22, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy and trimming.  
Operantly conditioned to lift front feet for treatments after foot soakings and epsom salt application.  
Still shaking the right front when up on stand - did very quickly.

Objective

~

Assessment

~

Plan

Both lesions were patted dry prior to cryotherapy. Performed with metal today.  
The left front D2 lesion had some trimming done to about 30% of it. The ventral medial necrotic section of tissue under the nail that is separate from the main lesion was trimmed as there was some excess tissue hanging. Cryotherapy performed again after trimming performed. Flushed the pockets with betadine 10% with red rubber catheter.  
The right front D5 lesion had two cycles of cryotherapy performed. Suspect this area will need to be trimmed soon as it is getting long enough to trim. Betadine applied topically to dry the lesion.  
Gentamicin:Excede 1:1 used topically today at end of day.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 20, 2021

Clinical note

DateTimeNote Author

Jul 20, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Printed: Nov 18, 2021

Buttonwood Park Zoo

Page 128 of 242

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Cryotherapy of the right front, D5 and reassessment.  
Keeper reports that she is still sensitive to it.

Objective

Noted when patient lifted the right front, the leg was shaking and seemed difficult for patient to hold the leg up on the metal stand. Concerned that the left front is more painful that patient has been indicating.  
The lesion is 1.75 cm at it widest and 6 cm in length under the nail. It is curling around the lateral edge of the nail to wrap around the nail edge.

Assessment

increased in size recently but seems stable.

Plan

Two freeze thaw cycles were performed today with verruca freeze canisters  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 18, 2021

Clinical note

Date

Jul 18, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

- ☒ Proliferative pododermatitis (canker), Left front digit 2
- ☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Assessment with cryotherapy to the left front, D2.  
Keeper reports that this patient seems to be showing no discomfort still.

Objective

Assessment of lesion  
There is no heat present to the dorsal and lateral aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.

From top to bottom for descriptions: The entire lesion is 14.5 cm in height and 14 cm in width. Approximately 2 cm in depth. There are no flaps of skin on medial and lateral sides. The yellow to white, papillae to crabmeat like material is oblong shaped and extends down the lateral aspect of the toe. It is 14.5 cm in total length, 10.25 cm at its widest along the dorsal aspect and tapers down to 6 cm in width at the lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail and along the side of it is necrotic tissue which is 8 cm in length and 7 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe that is approximately 4 cm by 8 cm wide. The pocket under the nail was palpated and wraps around about 3 cm section of the tissue to communicate more laterally outside of the nail just above the lower entrance. The central area where trimming occurred appears quiescent at this time.

Assessment

increased slightly in size again

Plan

Cryotherapy performed with metal - some of the proliferative, necrotic tissue stuck and was inadvertantly removed from the 3 cm section of tissue. Cryofreezed the entire lesion twice. Small amount of proliferative tissue was removed along the ventral edges (about 1 cm in height and covering about 6 cm of the lesion) with a scalpel blade #15. Nonreactive.  
Did great. Inserted a red rubber catheter into the pockets on either side around the section of soft tissue under the nail and applied betadine 10% into the lesion - communicated around to the outer opening.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 16, 2021

Clinical note

Date

Time

Note Author

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jul 16, 2021

00:00

Erica Lipanovich

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5  
☒ RADIOGRAPHS

Subjective

Elephant podiatrist consult.  
Patient was in left lateral recumbency and space was shared for full evaluation. Opportunistically took a few radiographs of the front feet.  
During assessment, some of the proliferative crabmeat like tissue was trimmed and cryotherapy was performed to D2 on the left front - two freeze/thaw cycles performed.  
Approximately 6 by 8 cm section of proliferative, necrotic tissue was removed using a #10 scalpel blade. Patient was nonresponsive to this being performed and did great.  
Cryotherapy with metal was utilized afterwards as there was a small amount of bleeding.  
Cryotherapy performed also using the verruca freeze cannister to right front D5.  
Opportunistically collected blood.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

RADIOGRAPHS

Onset Date

Jul 16, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Jul 16, 2021 00:00

Notes/Comments

Left front, digit 2 - P3 has minimal density and difficult to find in the thick soft tissue density. Lysis versus resorption? It is severely deviated at a 90 degree angle and very difficult to visualize for the left front D2. The proliferative lesion is easily visible. There is some distal bone density increase to P3 however feel that it is related to the soft tissue density lying over it and not a disease process at this time as the cortices are smooth and it is consistent in color. Plan to re-radiograph this in the next two weeks.  
Digits 1 and 3 are WNL.  
Right front, digit 5 - P3 is in the correct orientation and there is no evidence of lysis at this time.

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Jul 16, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Collection Method

Phlebotomy

Collected By

Karen Veary-Santos

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 16, 2021	~/~	Available	UMAWLAB/35/35

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample Detail

Collection Date/Time

Jul 16, 2021 00:00

Sample Type

Whole Blood

Anatomical Source/Tissue

~

Additives/Preservatives

EDTA

Collection Method

Phlebotomy

Collected By

Karen Veary-Santos

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jul 16, 2021	~/~	Available	UMAWLAB/21/21

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail

Date Requested

Requested By

Laboratory

Analysis Start Date

Analysis Equipment

Insufficient Sample

Jul 16, 2021

Erica Lipanovich

UMAWLAB

~

~

No

Sample Quality

Color

Color Intensity

Clarity

Consistency

Additional Characteristics

Degraded

~

~

~

~

~

No

Notes/Comments

anisocytosis 1+  
target cells 1+  
platelet clumping  
reactive monocytes- few  
  
Fibrinogen 200 mg/dl

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Est. WBC count	10.7 *10^3 cells/μL	Global sp RI: 0 - 19   8 [7] N=136 (23)	~	No	~	No
RBC [a]	2.58 *10^6 cells/μL	Global sp RI: 2.15 - 3.80   2.84 [2.79] N=5580 (197)	~	No	No	No
HGB [a]	10.40 g/dL	Global sp RI: 8.9 - 16.5   12.2 [12.1] N=6199 (212)	~	No	No	No
HCT [a]	33.8 %	Global sp RI: 24.2 - 47.3   34.7 [34.3] N=5507 (194)	~	No	No	No
MCV	131 fL	Global sp RI: 94.8 - 145.0   119.8 [121.1] N=2307 (113)	~	No	No	No
MCHC [c]	307.69 g/L	Global sp RI: 303 - 400   353 [353] N=3676 (155)	~	No	No	No
Neutrophil count [m]	1.5 *10^3 cells/μL	Global sp RI: 0.00 - 9.65   4.01 [3.57] N=108 (21)	~	No	No	No
Neutrophil % [m]	14 %	Global sp RI: 7.6 - 72.0   32.3 [29.0] N=3986 (172)	~	No	No	No
Band count [m]	0.75 *10^3 cells/μL	Basic Stats: ~ - ~   0.98 [0.00] N=25 (7)	~	No	~	No
Band % [m]	7 %	Global sp RI: 0.0 - 6.0   0.9 [0.0] N=1474 (141)	High	No	No	No
Lymphocyte count [m]	1.28 *10^3 cells/μL	Global sp RI: 0.00 - 9.31   3.39 [3.06] N=133 (23)	~	No	No	No
Lymphocyte % [m]	12 %	Global sp RI: 8.0 - 72.0   33.1 [30.0] N=4291 (186)	~	No	No	No
Monocyte count [m]	7.17 *10^3 cells/μL	Global sp RI: 0.001 - 10.646   5.283 [5.790] N=108 (21)	~	No	No	No
Monocyte % [m]	67 %	Global sp RI: 1.0 - 64.1   29.6 [31.0] N=4075 (185)	High	No	No	No
Eosinophil count [m]	0 *10^3 cells/μL	Global sp RI: 0.000 - 0.656   0.171 [0.128] N=95 (18)	~	No	No	No
Eosinophil % [m]	0 %	Global sp RI: 0.0 - 9.3   2.5 [2.0] N=3328 (175)	~	No	No	No
Basophil count [m]	0 *10^3 cells/μL	Global sp RI: 0.000 - 0.094   0.003 [0.000] N=85 (15)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 2.0   0.2 [0.0] N=1982 (141)	~	No	No	No
Polychromasia	none seen		~	~	~	No
Anisocytosis	rare (1+)		~	~	~	No
Est. Platelets	325 auto count, 690 slide estimate		~	~	~	No

Sample Detail (GSN: S-PGW21-005821)			
Collection Date/Time	Jul 16, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Whole Blood	Collected By	Karen Veary-Santos
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	EDTA	Exclude from reference intervals	No

Test & Result

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail	Sample Quality
<div><div>Date Requested</div><div>Requested By</div><div>Laboratory</div><div>Analysis Start Date</div><div>Analysis Equipment</div><div>Insufficient Sample</div></div> <div><div>Jul 16, 2021</div><div>Erica Lipanovich</div><div>UMAWLAB</div><div>~</div><div>~</div><div>No</div></div>	<div><div>Color</div><div>Color Intensity</div><div>Clarity</div><div>Consistency</div><div>Additional Characteristics</div><div>Degraded</div></div> <div><div>~</div><div>~</div><div>~</div><div>~</div><div>~</div><div>No</div></div>

Notes/Comments
<p>Acute Phase Protein Verified on: 07/22/21</p> <p>Test Level Comment Range Low Range High Units of Measure</p> <p>Serum amyloid A 58.0 HI 0 42.5 mg/L</p> <p>SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process.</p> <p>Haptoglobin 1.05 -- 0 1.1 mg/ml</p> <p>As in other species, HP is a minor APP in elephants. Two to three fold increases in this APP have been observed in clinically abnormal elephants. To date, the highest observed value in our laboratory has been 9mg/ml. In most species, HP is believed to be a preferred marker of chronic inflammation. In contrast to CRP and SAA, the increase in HP is delayed 4-6 days after stimulus and its expression is prolonged. As with other APP, repeated measures should have prognostic value.</p> <p>Capillary Zone Electrophoresis Verified on: 07/22/21</p> <p>Test Name Level Intervals % Level</p> <p>Total Protein g/dl 8.2 -- 6.5 - 8.9</p> <p>A/G ratio 0.85 -- 0.49 - 0.96</p> <p>Pre Albumin g/dL 0.39 HI 0.19 - 0.31 4.7</p> <p>Albumin g/dL 3.39 HI 2.51 - 3.38 41.4</p> <p>Alpha 1 g/dL 0.06 -- 0.05 - 0.13 0.7</p> <p>Alpha 2 g/dL 1.09 -- 0.64 - 1.45 13.3</p> <p>Beta 1 g/dL 0.88 -- 0.53 - 0.93 10.7</p> <p>Beta 2 g/dL 0.83 -- 0.75 - 1.61 10.1</p> <p>Beta total g/dL 1.71 -- 1.30 - 2.44 20.8</p> <p>Gamma g/dL 1.57 -- 0.77 - 2.06 19.1</p> <p>Method change to capillary zone EPH from agarose gel EPH for mammalian species on 9/1/20. Additional species will be added throughout 2020.</p> <p>EPH Interpretation</p> <p>Mild changes in some fractions are present. As the A/G ratio is not decreased, this likely reflects a normal variation in this patient. Followup as clinically warranted.</p>

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Total Protein	8.2 g/dL	Global sp RI: 6.5 - 9.6   8.0 [8.0] N=4296 (188)	~	No	No	No
A:G ratio	0.85 ratio	Global sp RI: 0.1 - 1.0   0.7 [0.7] N=2104 (121)	~	No	No	No
Pre-albumin EPH	0.39 g/dL	Global sp RI: 0.00 - 0.42   0.08 [0.00] N=92 (19)	~	No	No	No
Albumin EPH	3.39 g/dL	Global sp RI: 2.46 - 4.48   3.29 [3.21] N=193 (44)	~	No	No	No
α-1 Globulin EPH	0.06 g/dL	Global sp RI: 0.07 - 1.10   0.63 [0.68] N=188 (40)	Low	No	No	No
α-2 Globulin EPH	1.09 g/dL	Global sp RI: 0.31 - 1.15   0.65 [0.60] N=191 (39)	~	No	No	No
β-1+2 Globulin EPH	1.71 g/dL	Global sp RI: 0.56 - 2.93   1.52 [1.40] N=101 (30)	~	No	No	No
γ Globulin EPH	1.57 g/L	Global sp RI: 3.1 - 33.3   17.4 [17.0] N=172 (40)	Low	No	~	No
Serum Amyloid A	58.0 mg/L	Global sp RI: 0.1 - 129.9   13.9 [2.2] N=40 (21)	~	No	~	No
Haptoglobin	1.05 mg/ml	Global sp RI: 0.06 - 4.07   1.22 [1.14] N=73 (22)	~	No	~	No



Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date

Jul 15, 2021

Significant

No

Time

00:00

Private

No

Note Author

Lisa Bonanni

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryo today on R front

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 12, 2021

Clinical note

Date

Jul 12, 2021

Significant

No

Time

00:00

Private

No

Note Author

Erica Lipanovich

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Recheck lesions.  
Keeper reports that she is doing well.  
Taking meds well.

Objective

Assessment of lesion  
There is no heat present to the dorsal and lateral aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.  
  
From top to bottom for descriptions: The entire lesion is 15.5 cm in height and 12 cm in width. Seems to be more over the third digit now. Approximately 3.5 cm in depth that is visible. There are no flaps of skin on medial and lateral sides. The yellow to white, papillae to crabmeat like material is oblong shaped and extends down the lateral aspect of the toe. It is 12 cm at its widest along the dorsal aspect and tapers down to 9 cm in width at the lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail and along the side of it is necrotic tissue which is 8.5 cm in length and 8 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe that is approximately 7 cm by 4 cm wide. The pocket under the nail was not palpated as just palpated yesterday. The central area where trimming occurred appears quiescent at this time.

Assessment

proliferative tissue has increased in size.

Plan

There was a large section of necrotic tissue that was sloughing off - trimmed with #15 scalpel blade - nonresponsive while performing so no indications of pain. Trimmed about 4 by 8 cm section of tissue and 2 cm in depth. No bleeding.  
Cryotherapy performed using metal for three freeze thaw cycles.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jul 10, 2021

Clinical note

Date

Time

Note Author

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jul 10, 2021

00:00

Lisa Bonanni

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2  
☒ Proliferative pododermatitis (canker), Right front digit 5

Note Subtype: General

Notes/Comments

Cryo on left front, 3 cycles.

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Jul 10, 2021

Start Date

Jul 10, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jul 10, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

20,445 mg

Dosage Amount

7.5 mg/kg

Administrated Dose Quantity

20,445 mg

Frequency

once a day (sid)

Duration

30days

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

Semisolid

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 3 scoops dissolved completely in water rectally either once daily or 1.5 scoops dissolved completely in water rectally twice daily for 30 days. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Aug 08, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Aug 07, 2021 00:00	Michael Weaver	20%	switched to EOD
Aug 05, 2021 00:00	Michael Weaver	Complete	~
Aug 04, 2021 00:00	Michael Weaver	20%	~
Aug 03, 2021 00:00	Karen Veary-Santos	50%	~
Aug 02, 2021 00:00	Karen Veary-Santos	20%	~
Aug 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 31, 2021 00:00	Michael Weaver	50%	~
Jul 30, 2021 00:00	Michael Weaver	Complete	~
Jul 29, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 26, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 25, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 24, 2021 00:00	Michael Weaver	Complete	~
Jul 23, 2021 00:00	Michael Weaver	Complete	~
Jul 22, 2021 00:00	Michael Weaver	Complete	~
Jul 21, 2021 00:00	Michael Weaver	Complete	~
Jul 20, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 19, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 18, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 17, 2021 00:00	Michael Weaver	Complete	~
Jul 16, 2021 00:00	Michael Weaver	Complete	~
Jul 15, 2021 00:00	Michael Weaver	Complete	~
Jul 14, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 13, 2021 00:00	Kathryn Harding	Complete	~
Jul 12, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 11, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 10, 2021 00:00	Michael Weaver	Complete	~

Jul 08, 2021

Clinical note

Date	Time	Note Author
Jul 08, 2021	00:00	Lisa Bonanni
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Right front digit 5
Note Subtype: General		
Notes/Comments		
Cryotherapy performed on the palmar aspect of the right front foot and the proliferative tissue on the left front.		
Animal Care Staff Medical Summary		
~		

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jul 07, 2021

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Jul 08, 2021

Start Date

Jul 07, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jul 08, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,160 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

6.295 mg/kg

Duration

30days

Concentration Of Drug

800 mg

Administrated Dose Quantity

21.45 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Aug 05, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 05, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 04, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 04, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 03, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 03, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 02, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 02, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 01, 2021 00:00	Karen Veary-Santos	Complete	~
Aug 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 31, 2021 00:00	Michael Weaver	Complete	~
Jul 31, 2021 00:00	Michael Weaver	Complete	~
Jul 30, 2021 00:00	Michael Weaver	Complete	~
Jul 30, 2021 00:00	Michael Weaver	Complete	~
Jul 29, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jul 29, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 26, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 26, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 25, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 25, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 24, 2021 00:00	Michael Weaver	Complete	~
Jul 24, 2021 00:00	Michael Weaver	Complete	~
Jul 23, 2021 00:00	Michael Weaver	Complete	~
Jul 23, 2021 00:00	Michael Weaver	Complete	~
Jul 22, 2021 00:00	Michael Weaver	Complete	~
Jul 22, 2021 00:00	Michael Weaver	Complete	~
Jul 21, 2021 00:00	Michael Weaver	Complete	~
Jul 21, 2021 00:00	Michael Weaver	Complete	~
Jul 20, 2021 00:00	Kathryn Harding	Complete	~
Jul 20, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 19, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 19, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 18, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 18, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 17, 2021 00:00	Michael Weaver	Complete	~
Jul 17, 2021 00:00	Michael Weaver	Complete	~
Jul 16, 2021 00:00	Michael Weaver	Complete	~
Jul 16, 2021 00:00	Michael Weaver	Complete	~
Jul 15, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 15, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 14, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 14, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 13, 2021 00:00	Kathryn Harding	Complete	~
Jul 13, 2021 00:00	Kathryn Harding	Complete	~
Jul 12, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 12, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 11, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 11, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 10, 2021 00:00	Michael Weaver	Complete	~
Jul 10, 2021 00:00	Michael Weaver	Complete	~
Jul 09, 2021 00:00	Michael Weaver	Complete	~
Jul 09, 2021 00:00	Michael Weaver	Complete	~
Jul 08, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 08, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 07, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 07, 2021 00:00	Karen Veary-Santos	Complete	~

Jul 06, 2021

Clinical note

Date	Time	Note	Author
------	------	------	--------

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jul 06, 2021

10:30

Michelle Kneeland

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy session

No significant changes noted by keepers, they have been administering meds and iodine flush as directed.

Objective

Proliferative tissue on left front appears mostly similar to last week.

Assessment

~

Plan

Cryotherapy treatment on left front using metal file- tolerated well.

Michelle Kneeland

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jun 30, 2021

Clinical note

Date

Time

Note Author

Jun 30, 2021

00:00

Erica Lipanovich

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

Subjective

Cryotherapy.

Keeper reports that this elephant was seen climbing rocks to get to tree limbs and was sore the next day. Has been receiving meds and daily treatments as directed with no issues.

Objective

The left front - can see where there is some necrotic tissue where the previous trimming was performed. Lots of fresh white papillae tissue that seems to have gotten longer in the last two days.

Palpated the ventral opening directly under the nail - approximately 4 cm and seems to be curling around the lesion under the nail. There is a shelf where the nail is attached to the slipper margin - flushed with betadine solution. No debris came out.

Assessment

~

Plan

Treatment:

Elected to try some cryotherapy using metal pieces frozen in liquid nitrogen. Patient did great and able to take some tissue off using a scalpel blade that was falling off.

To continue to monitor.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jun 27, 2021

Clinical note

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Date

Jun 27, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Assessment and Cryotherapy.

**Objective**

Assessment of lesions  
There is no heat present to the dorsal and lateral aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.

Left front, Second digit lesion assessment -  
From top to bottom for descriptions: The entire lesion is 15.5 cm in height and 11.5 cm in width. The new white crabmeat tissue is 10.5 cm by 11.5 cm and moist. Approximately 2.5 cm in depth. There are no flaps of skin on medial and lateral sides. The yellow to white, papillae crabmeat like tissue is globoid shaped and extends down the lateral aspect of the toe. It is 15.5 cm in total length, 11.5 cm at its widest along the dorsal aspect and tapers down to 9.5 cm in width at the lateral section of the toe. The toe nail on the medial aspect is attached but is abducted out (as predicted by the podiatrist). Underneath the nail and along the side of it is grey necrotic tissue which is 6 cm in length and 5 cm in width that can be seen at this time. There is a moist mix of white crabmeat tissue and grey necrotic tissue along the slipper margin on the ventral toe that is approximately 6.5 cm by 8.5 cm wide. The central ventral half of the lesion where previous trimming was done, has a hard yellow, fibrotic to rubbery like section that is nonpainful to touch. Suspect that this can be removed this week.

Right front, Fifth digit nail/slipper lesion assessment -  
Triangular in shape with the point going laterally. It is approximately 2.5 at the widest and 2.75 cm from the lateral to medial. It is white in coloration. White crabmeat like tissue seen with some necrosis occuring around the entire edge. Appears the edge is extending under the medial section of the nail edge but unable to determine how far.

**Assessment**

strongly suspect the nail on digit 2 (left front) will be falling off within the next 1-2 weeks.  
proliferative pododermatitis of the left front nail, digit 2 - increased in size  
proliferative pododermatitis of the right front, digit 5 slipper margin - stable

**Plan**

Cryotherapy done to approximately 1/2 of the front left lesion and to the entire lesion of the front right (three freeze thaw cycles performed).  
Did great for it.  
Gentamycin:Excede mixture to be applied tonight.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jun 24, 2021

Clinical note

Date

Jun 24, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

☒ Proliferative pododermatitis (canker), Right front digit 5

**Subjective**

Complaint.  
Keeper reported midafternoon that the right front digit 5 is starting to get an early white crabmeat like lesion similar to the proliferative pododermatitis on the left front under the nail.  
Ambulating normally per keeper staff.

**Objective**

Visual exam.  
Triangular in shape with the point going laterally. It is approximately 2.5 at the widest and 2.75 cm from the lateral to medial. It is white in coloration. Unsure if painful as patient is being uncooperative for palpation at this time. White crabmeat like tissue seen with some necrosis occuring around the entire edge.

**Assessment**

new proliferative pododermatitis to the right front, digit 5 under the nail tip.

**Plan**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Discussed options for trimming and recommend starting cryotherapy tomorrow to the lesion. To start with Verracruz canister and may go to metal application depending on how it responds.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Medical Condition/Syndrome/Disorder

Proliferative pododermatitis (canker), Right front digit 5

Onset Date	Responsible Clinician	Confidence Level
Jun 24, 2021 00:00	Erica Lipanovich	Confirmed

Resolution Date	Unresolveable
~	No

Notes/Comments

P3 is still deviated but is otherwise good density.

Jun 22, 2021

Clinical note

Date	Time	Note Author
Jun 22, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Update.  
Keeper reports that this patient is back to normal self. There is a normal amount of normal shaped and sized fecal boluses in the stall this morning.  
Appears to be resolved for now. To monitor.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jun 21, 2021

Clinical note

Date	Time	Note Author
Jun 21, 2021	00:00	Erica Lipanovich

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Complaint.

Keeper reports that this patient has been unusually aggitated today and eating all offered items well but the browse. Also has the wide eyes similar to when having GI upset. This patient has received all medications well and topical treatments. Does not appear bloated per staff. Elect to separate this patient from the herdmate for monitoring of fecals and input/output of fluids.

Keeper mixed in mineral oil with her grain and bran mash at the end of the day. To monitor very closely.

E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jun 20, 2021

Clinical note

Date

Time

Note Author

Jun 20, 2021

00:00

Erica Lipanovich

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Assessment of lesion.

Objective

Assessment of lesion

There is no heat present to the dorsal and lateral aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.

From top to bottom for descriptions: The entire lesion is 14.5 cm in height and 10.25 cm in width. The new white crabmeat tissue is 8.5 cm by 10.25 cm and moist. Approximately 2.75 cm in depth. There are no flaps of skin on medial and lateral sides. The yellow to white, papillae to crabmeat like material is eggplant shaped and extends down the lateral aspect of the toe. It is 14.5 cm in total length, 10.5 cm at its widest along the dorsal aspect and tapers down to 6 cm in width at the lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail and along the side of it is necrotic tissue which is 5.25 cm in length and 4 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe that is approximately 6 cm by 8.5 cm wide. The pocket under the nail was not palpated as just palpated yesterday. The central area where trimming occured appears quiescent at this time.

Assessment

Lesion has increased in size from last assessment.

Plan

No change to treatment at this time.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jun 19, 2021

Clinical note

Date

Time

Note Author

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jun 19, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Podiatrist  
This elephant was assessed midday by the consultant. Footwork performed and she did great throughout the entire procedure.

Objective

Proliferative pododermatitis lesion on the left front, nail two - trimmed along the slipper margin and nail base at the ventral medial aspect of the nail. Found a blind pocket that was not painful at all of necrotic tissue. Able to palpate and extend into the lesion. Approximately 2 cm in width and extends about 4 cm under the nail. Very moist and malodorous but definitely not painful. Patient allowed palpation all the way around the tissue. Only place that seems painful was along the dorsal skin margin where it is the newest proliferative section. The nail edge that is pressed against the proliferative tissue was trimmed as there was concern that micromovements in this area was causing this to become proliferative. The ventral lateral edge of the nail was also trimmed to raise it up and prevent movement when ambulating. The slipper was trimmed slightly along the lesion margin as there was a 1-2 mm shelf present as a way to prevent further contamination. The center of the lesion has a 6 by 6.5 cm section that is very mobile and fibrotic in nature. It also extended the most out of the lesion. There is a lot of brown papillae that are very moist protruding from this lesion. Used a scalpel blade and trimmed about 2.5 cm off - nonpainful. Several other sections were gently trimmed with a scalpel blade - nonpainful. The initial 1 cm was brown papillae (crabmeat like tissue) but the inner sections were hard, white and rubbery. The ventral lesion has a large section of pink and white moist, malodorous tissue. This area is sensitive to palpation/touch. Does not recommend doing any cryotherapy to this area. Focus mostly on the crabmeat/papillae tissue and central lesion.

Assessment

overall assessment by podiatrist was very positive but warned that this is going to get bigger and look worse before it gets better.  
agrees with current course of medial therapy and agrees that the lab results do not indicate there is active infection at this time, despite how the foot looks and occasionally smells.

Plan

Nails were trimmed on all four feet and some of the pad was trimmed to help make movement and standing more comfortable, prevent further breakdown of the other nails and to prevent further movement to the proliferative pododermatitis lesion. Full report to be sent by podiatrist.  
Overall, very positive feedback to current treatments and response to therapies.  
Plan to flush the blind pocket on the ventral/lateral aspect of the nail with betadine twice weekly to help dry the tissue out and prevent infection.

Phone consults with several institutions about current treatments being done with cryotherapy as feel the Verracruz cannisters are not getting deep enough penetration - four responded by recommending metal instruments immersed in liquid nitrogen and applying to lesions. There was a brand of re-usable canister with multiple types of tips that was also recommended. To order liquid nitrogen next week and to get instruments made for treatments.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jun 17, 2021

Sample

Sample Detail

Collection Date/Time

Jun 17, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

2-8 hours

Restraint Type

Behavioral

Activity

Moderate activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 17, 2021	~/~	Available	IDEXXUSA/1/1

Notes

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

### Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

## Sample

### Sample Detail

Collection Date/Time	Jun 17, 2021 00:00
Sample Type	Whole Blood
Anatomical Source/Tissue	~
Additives/Preservatives	~
Collection Method	~
Collected By	Lisa Bonanni
Reason	~
Exclude from reference intervals	No

## Sample Quality

Additional Characteristics	~
Degraded	No

### Pre-Sampling Conditions

<b>Fasting Duration</b>	2-8 hours
<b>Restraint Type</b>	Behavioral
<b>Activity</b>	Moderate activity

### Initial Holding Conditions

**Initial Holding Temp.** ~  
**Initial Holding Duration** ~

### Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 17, 2021	~/~	Available	IDEXXUSA/8/8

## Notes

2

## Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

### Test & Result

### Test Request Detail

Date Requested	Jun 17, 2021
Requested By	Erica Lipanovich
Laboratory	IDEXXUSA
Analysis Start Date	~
Analysis Equipment	~
Insufficient Sample	No

### Sample Quality

Color	~
Color Intensity	~
Clarity	~
Consistency	~
Additional Characteristics	~
Degraded	No

## Notes/Comments

Sample was 10 days old

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
WBC	9.1 *10^3 cells/μL	Global sp RI: 7.5 - 18.8   13.0 [12.9] N=2998 (113)	~	No	No	No
RBC [a]	2.92 *10^6 cells/μL	Global sp RI: 1.86 - 3.53   2.65 [2.62] N=2723 (112)	~	No	No	No
HGB [a]	12.8 g/dL	Global sp RI: 9.9 - 15.7   12.4 [12.3] N=2698 (113)	~	No	No	No
HCT	38 %	Global sp RI: 28.9 - 43.9   35.5 [35.3] N=1362 (73)	~	No	No	No
MCV	130 fL	Global sp RI: 102.1 - 146.0   123.4 [122.0] N=2484 (96)	~	No	No	No
MCH	43.8 pg	Global sp RI: 38.0 - 61.9   46.9 [46.1] N=2336 (91)	~	No	No	No
MCHC	33.7 g/dL	Global sp RI: 30.5 - 49.2   38.7 [38.5] N=2403 (93)	~	No	No	No
Platelets	194 *10^3 cells/μL	Global sp RI: 108 - 839   304 [218] N=2433 (98)	~	No	No	No

Sample Detail (GSN: S-PGW21-005728)			
Collection Date/Time	Jun 17, 2021 00:00	Collection Method	~
Sample Type	Whole Blood	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result

Test Request Detail		Sample Quality	
Date Requested	Jun 17, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	IDEXXUSA	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Notes/Comments
~

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Fibrinogen	300 mg/dL	Global sp RI: 200 - 708   380 [400] N=338 (37)	~	No	No	No

Sample Detail (GSN: S-PGW21-005727)			
Collection Date/Time	Jun 17, 2021 00:00	Collection Method	~
Sample Type	Plasma	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Jun 13, 2021

Clinical note

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Date

Jun 13, 2021

Time

00:00

Note

Erica Lipanovich

Author

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

**Subjective**

Recheck with Assessment and Cryotherapy.  
Keepers reports that taking medications well however the lesion seems more sensitive since the last cryotherapy three days ago. Still ambulating well on it for this animal and foot bathes are going well.  
Keepers also feel it has increased in size again.  
No heat per keepers this morning as assessment is being performed post foot bathes.

**Objective**

Assessment of lesion  
There is no heat present to the dorsal aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.

From top to bottom for descriptions: The entire lesion is 14 cm in height and 9.5 cm in width. The new white crabmeat tissue is 9 cm by 9 cm and moist. Approximately 2 cm in depth. There are two flaps of skin on medial and lateral sides that are mildly uncomfortable to manipulation. The yellow (dry) to white, papillae to crabmeat like material is C-shaped - it starts at the dorsal medial of the nail cuticle and wraps around to the lateral aspect of the toe. It is 12.5 cm in total length, 10 cm at its widest along the dorsal aspect and curves around to 3.75 cm in width at the ventral/lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail is necrotic tissue which is 6 cm in length and 5 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe that is approximately 3.5 cm by 6.75 cm wide. There is some mucoid white purulent debris in this section. The yellow papilla can easily be seen laying on top of this section and is approximately 4 cm in height.

**Assessment**

increased in size very slightly - proliferative pododermatitis.

**Plan**

Cryotherapy performed today - seems to be painful during treatment. Only able to get about half of the lesion treated before seemed to be too uncomfortable to continue. The areas treated were the lateral half and the ventral edge along the slipper.  
Blood collection requested of staff over the next few days.  
Excede:Gentamicin topically given to staff for application in evening.  
Podiatrist is scheduled to arrive at the end of the week for a recheck so elect to leave it alone until visit.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jun 10, 2021

**Clinical note**

Date

Jun 10, 2021

Time

00:00

Note

Erica Lipanovich

Author

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

**Subjective**

Cryotherapy.  
Patient taking meds well.  
No salt pack performed today as cryotherapy to be done today.

**Objective**

Very BAR and excellent for therapy - behaviorally engaged the entire time.  
The lesion was not painful to the touch and seemed mildly moist. No heat to touch to the digit or the surrounding digits at this time.  
Noted the left zygomatic arch has a new 1 cm by 1.25 cm oblong shaped superficial scrap present. Skin edges loose around it. The right pinna margin has decreased in size significantly - 8 cm long and 2.5 cm at the widest on the dorsal section and tapers towards the bottom. Significant skin puckering occurring to the ventral 3 cm as the lesion closes.

**Assessment**

~

**Plan**

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Facial lesion was cleaned with dilute chlorhexidine and then dried and small amount of vitamin A/D ointment applied.  
The lesion had two freeze/thaw cycles performed to the entire lesion today. Attempted to use the metal tube to freeze and roll across the lesion, but could not get the tube cold enough for the tissue to stick well enough. Did great today.  
Excede:Gentamicin mixture provided for the keepers to apply tonight.  
E Lipanovich, DVM

Addendum: culture and sensitivity result shows no growth for anaerobics and aerobics grew three types of bacteria that are more than likely contaminants. Shows sensitivity to enrofloxacin for all bacteria. To not add an additional antibiotic at this time. EWL

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Jun 10, 2021	Date	Jun 10, 2021
Start Date	Jun 10, 2021 00:00	Measurement Value	2,726 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Treatment Detail			
Treatment Item/Drug	Enrofloxacin		
Dose Amount	20,445 mg	Frequency	once a day (sid)
Dosage Amount	7.5 mg/kg	Duration	30days
Administrated Dose Quantity	20,445 mg	Delivery Route	Instillation, rectum (enema)
		Loading Dose	~
		Form of Drug	Semisolid
		Concentration Of Drug	
		~	

Treatment Response	
Clinical Response	~
Adverse Effects	~
Adverse Effects Note:	
	~

Staff Instructions

Give 3 scoops dissolved completely in water rectally either once daily or 1.5 scoops dissolved completely in water rectally twice daily for 30 days. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Jul 09, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records		
Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Jul 09, 2021 00:00	Michael Weaver	Complete	~
Jul 08, 2021 00:00	Michael Weaver	Complete	~
Jul 07, 2021 00:00	Michael Weaver	90%	~
Jul 06, 2021 00:00	Michael Weaver	Complete	~
Jul 05, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 04, 2021 00:00	Kathryn Harding	Complete	~
Jul 03, 2021 00:00	Michael Weaver	Complete	~
Jul 02, 2021 00:00	Michael Weaver	Complete	~
Jul 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 30, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 29, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 26, 2021 00:00	Michael Weaver	Complete	~
Jun 25, 2021 00:00	Michael Weaver	Complete	~
Jun 24, 2021 00:00	Michael Weaver	Complete	~
Jun 23, 2021 00:00	Michael Weaver	Complete	~
Jun 22, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 21, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 20, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 19, 2021 00:00	Michael Weaver	Complete	~
Jun 18, 2021 00:00	Michael Weaver	Complete	~
Jun 17, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 16, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 15, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 14, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 13, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 12, 2021 00:00	Michael Weaver	Complete	~
Jun 11, 2021 00:00	Michael Weaver	Complete	~
Jun 10, 2021 00:00	Karen Veary-Santos	Complete	~

Jun 08, 2021

Clinical note

Date	Time	Note Author
Jun 08, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2
Subjective		
Blood collection. Keepers were successful in getting blood today. CBC and biochemistry run in house. No significant findings at this time. To send out for acute phase proteins and electrophoresis to U of Miami. E Lipanovich, DVM		
Objective		
~		
Assessment		
~		
Plan		
~		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time	Jun 08, 2021 00:00
Sample Type	Serum
Anatomical Source/Tissue	~
Collection Method	~
Collected By	Lisa Bonanni
Reason	~
Exclude from reference intervals	No

Initial Holding Conditions

Initial Holding Temp.	~
Initial Holding Duration	~

Sample Quality

Color	~
Color Intensity	~
Clarity	~
Additional Characteristics	~
Degraded	No

Pre-Sampling Conditions

Fasting Duration	< 2 hours
Restraint Type	Behavioral
Activity	Moderate activity

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 08, 2021	~/~	Available	NEW BEDFO/14/14
Jun 08, 2021	~/~	Available	UMAWLAB/11/11

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time	Jun 08, 2021 00:00
Sample Type	Whole Blood
Anatomical Source/Tissue	~
Additives/Preservatives	~
Collection Method	~
Collected By	Lisa Bonanni
Reason	~
Exclude from reference intervals	No

Initial Holding Conditions

Initial Holding Temp.	~
Initial Holding Duration	~

Sample Quality

Additional Characteristics	~
Degraded	No

Pre-Sampling Conditions

Fasting Duration	< 2 hours
Restraint Type	Behavioral
Activity	Moderate activity

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 08, 2021	~/~	Available	NEW BEDFO/11/11

Notes

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail		Sample Quality	
Date Requested	Jun 08, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	UMAWLAB	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Notes/Comments	
Gen: Method change to capillary zone EPH from agarose gel EPH for mammalian species on 9/1/20. Additional species will be added throughout 2020. EPH Interpretation Mild changes in some fractions are present. As the A/G ratio is not decreased, this likely reflects a normal variation in this patient. Followup as clinically warranted.  SAA levels have been examined in elephants and it appears that this is a major APP in this species. Clinically abnormal elephants have been described with levels from 30-300mg/L. As a major APP, this test may provide the best prognostic value in animals under treatment or to monitor the progression of a disease process.	

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Total Protein	7.8 g/dL	Global sp RI: 6.3 - 9.2   7.8 [7.8] N=878 (96)	~	No	No	No
A:G ratio	0.66 ratio	Global sp RI: 0.5 - 1.0   0.7 [0.7] N=605 (51)	~	No	No	No
Pre-albumin EPH	0.3 g/dL	Global sp RI: 0.00 - 0.43   0.19 [0.21] N=160 (17)	~	No	No	No
Albumin EPH	2.80 g/dL	Global sp RI: 2.10 - 3.95   2.99 [3.03] N=168 (23)	~	No	No	No
α-1 Globulin EPH	0.07 g/dL	Global sp RI: 0.03 - 0.86   0.28 [0.09] N=174 (24)	~	No	No	No
α-2 Globulin EPH	1.11 g/dL	Global sp RI: 0.32 - 1.34   0.87 [0.97] N=174 (24)	~	No	No	No
β-1+2 Globulin EPH	2.06 g/dL	Global sp RI: 1.10 - 2.50   1.73 [1.74] N=102 (15)	~	No	No	No
γ Globulin EPH	1.46 g/dL	Global sp RI: 0.90 - 2.34   1.48 [1.43] N=173 (24)	~	No	~	No
β-1 Globulin EPH	0.98 g/dL	Global sp RI: 0.07 - 1.49   0.72 [0.70] N=60 (21)	~	No	~	No
β-2 Globulin EPH	1.08 g/dL	Global sp RI: 0.09 - 1.88   1.00 [0.98] N=48 (17)	~	No	~	No
Serum Amyloid A	28.9 mg/L	Global sp RI: 0.2 - 214.9   29.9 [5.1] N=105 (28)	~	No	~	No

Sample Detail (GSN: S-PGW21-005710-S01)			
Collection Date/Time	Jun 08, 2021 00:00	Collection Method	~
Sample Type	Serum	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test & Result

<div>Test Request Detail</div> <div><div>Date Requested</div><div>Requested By</div><div>Analysis Start Date &amp; Time</div><div>Analysis By</div><div>Analysis Equipment</div><div>Insufficient Sample</div></div> <div><div>Jun 08, 2021</div><div>Erica Lipanovich</div><div>~</div><div>Lisa Bonanni</div><div>~</div><div>No</div></div>	<div>Sample Quality</div> <div><div>Color</div><div>Color Intensity</div><div>Clarity</div><div>Consistency</div><div>Additional Characteristics</div><div>Degraded</div></div> <div><div>~</div><div>~</div><div>~</div><div>~</div><div>~</div><div>No</div></div>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Notes/Comments
rouleaux mild reactive lymphs- mild

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
HCT	33 %	Global sp RI: 28.9 - 43.9   35.5 [35.3] N=1362 (73)	~	No	No	No
Est. WBC count	5.0 *10^3 cells/ $\mu$ L	Global sp RI: 0 - 13   7 [7] N=105 (12)	~	No	~	No
Heterophil % [m]	28 %	Global sp RI: 12.5 - 45.0   24.2 [23.0] N=659 (21)	~	No	No	No
Lymphocyte % [m]	13 %	Global sp RI: 5.0 - 39.0   18.6 [17.5] N=1080 (54)	~	No	No	No
Monocyte % [m]	57 %	Global sp RI: 10.0 - 73.0   51.1 [54.0] N=1087 (59)	~	No	No	No
Eosinophil % [m]	2 %	Global sp RI: 0.0 - 6.0   2.2 [2.0] N=1024 (56)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 1.0   0.2 [0.0] N=611 (41)	~	No	No	No
Est. Thrombocytes	270 000		~	~	~	No
Blood parasites	none seen		~	~	~	No
Anisocytosis	none seen		~	~	~	No
Polychromasia	none seen		~	~	~	No

Sample Detail (GSN: S-PGW21-005709)			
<div>Collection Date/Time</div> <div>Sample Type</div> <div>Anatomical Source/Tissue</div> <div>Additives/Preservatives</div>	<div>Jun 08, 2021 00:00</div> <div>Whole Blood</div> <div>~</div> <div>~</div>	<div>Collection Method</div> <div>Collected By</div> <div>Reason</div> <div>Exclude from reference intervals</div>	<div>~</div> <div>Lisa Bonanni</div> <div>~</div> <div>No</div>

Test & Result

<div>Test Request Detail</div> <div><div>Date Requested</div><div>Requested By</div><div>Analysis Start Date &amp; Time</div><div>Analysis By</div><div>Analysis Equipment</div><div>Insufficient Sample</div></div> <div><div>Jun 08, 2021</div><div>Erica Lipanovich</div><div>~</div><div>Lisa Bonanni</div><div>~</div><div>No</div></div>	<div>Sample Quality</div> <div><div>Color</div><div>Color Intensity</div><div>Clarity</div><div>Consistency</div><div>Additional Characteristics</div><div>Degraded</div></div> <div><div>~</div><div>~</div><div>~</div><div>~</div><div>~</div><div>No</div></div>
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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Notes/Comments

amylase= 1 U/L  
normal serum appearance

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Albumin unspecified	3.1 g/dL	Not calculated	~	~	~	No
Alk. Phos.	42 U/L	Global sp RI: 42 - 249   99 [75] N=758 (91)	~	No	No	No
ALT	<5 U/L	Global sp RI: 0 - 15   4 [3] N=378 (58)	~	No	No	No
Amylase	~ U/L	Global sp RI: 0 - 4,179   1,398 [1,213] N=195 (29)	~	No	No	No
Tot. Bili.	0.3 mg/dL	Global sp RI: 0.1 - 0.4   0.2 [0.2] N=743 (92)	~	No	No	No
BUN	12 mg/dL	Global sp RI: 5.3 - 16.3   10.9 [11.0] N=852 (97)	~	No	No	No
Ca	11.0 mg/dL	Global sp RI: 9.1 - 11.8   10.5 [10.5] N=866 (100)	~	No	No	No
Phos	4.5 mg/dL	Global sp RI: 3.0 - 7.0   4.8 [4.7] N=823 (95)	~	No	No	No
Creatinine	1.4 mg/dL	Global sp RI: 0.7 - 2.0   1.2 [1.2] N=815 (95)	~	No	No	No
Glucose	62 mg/dL	Global sp RI: 54 - 119   83 [83] N=807 (90)	~	No	No	No
Na	128 mmol/L	Global sp RI: 124 - 138   130 [130] N=821 (94)	~	No	No	No
K	4.3 mmol/L	Global sp RI: 3.8 - 5.4   4.5 [4.4] N=809 (93)	~	No	No	No
Total Protein	8.5 g/dL	Global sp RI: 6.3 - 9.2   7.8 [7.8] N=878 (96)	~	No	No	No
Globulin	5.4 g/dL	Global sp RI: 3.3 - 6.4   4.6 [4.7] N=635 (75)	~	No	No	No

Sample Detail (GSN: S-PGW21-005710)			
Collection Date/Time	Jun 08, 2021 00:00	Collection Method	~
Sample Type	Serum	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Jun 07, 2021

Clinical note		
Date	Time	Note Author
Jun 07, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2
Subjective		
Cryotherapy and assessment. Keeper reports still being hypervigilant about medications being hidden in food items but rectal administration is going well. Moving around well and eating great. Good attitude.		
Objective		
Assessment of lesion There is no heat present to the dorsal aspect of digit two and three and no heat present to the nail areas. Nonpainful on palpation.		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

From top to bottom for descriptions: The entire lesion is 12 cm in height and 9 cm in width. The new white crabmeat tissue is 9 cm by 8.5 cm and moist. Approximately 1.5 cm in depth. There are two flaps of skin on medial and lateral sides that are mildly uncomfortable. The yellow (dry) to white, papillae to crabmeat like material is C-shaped - it starts at the dorsal medial of the nail cuticle and wraps around to the lateral aspect of the toe. It is 12.5 cm in total length, 10 cm at its widest along the dorsal aspect and curves around to 3.75 cm in width at the ventral/lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail is necrotic tissue which is 6 cm in length and 5 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe that is approximately 3.5 cm by 6 cm wide. There is some mucoid white purulent debris in this section. The yellow papilla can easily be seen laying on top of this section and is approximately 4 cm in height.

Assessment

increased in size - proliferative pododermatitis.

Plan

Blood collection requested of staff over the next few days.  
Excede:Gentamicin topically given to staff for application in evening.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

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Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Jun 07, 2021	Date	Jun 07, 2021
Start Date	Jun 07, 2021 00:00	Measurement Value	2,726 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Treatment Detail

Treatment Item/Drug	Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)		
Dose Amount	17,160 mg	Frequency	twice a day (bid)
Dosage Amount	6.295 mg/kg	Duration	30days
Administrated Dose Quantity	21.45 count	Delivery Route	Oral (p.o.)
		Loading Dose	~
Form of Drug	Tablet		
	Concentration Of Drug		
	800 mg		

Treatment Response

Clinical Response	~
Adverse Effects	~
Adverse Effects Note:	
	~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.
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Prescription Notes/Comments

~
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Calendar Items

Date	Title	Assigned To	Done
Jul 06, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records

Administration Date/Time	Administered By	Success	Notes
Jul 06, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 06, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 05, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 05, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 04, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 04, 2021 00:00	Kathryn Harding	Complete	~
Jul 03, 2021 00:00	Michael Weaver	Complete	~
Jul 03, 2021 00:00	Marcy Cocchiola	Complete	~
Jul 02, 2021 00:00	Michael Weaver	Complete	~
Jul 02, 2021 00:00	Michael Weaver	~	~
Jul 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jul 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 30, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 30, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 29, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 29, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 28, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 27, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 26, 2021 00:00	Michael Weaver	Complete	~
Jun 26, 2021 00:00	Michael Weaver	Complete	~
Jun 25, 2021 00:00	Michael Weaver	Complete	~
Jun 25, 2021 00:00	Michael Weaver	Complete	~
Jun 24, 2021 00:00	Kathryn Harding	Complete	~
Jun 24, 2021 00:00	Michael Weaver	Complete	~
Jun 23, 2021 00:00	Kathryn Harding	Complete	~
Jun 23, 2021 00:00	Michael Weaver	Complete	~
Jun 22, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 22, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 21, 2021 00:00	Kathryn Harding	Complete	~
Jun 21, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 20, 2021 00:00	Kathryn Harding	Complete	~
Jun 20, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 19, 2021 00:00	Michael Weaver	Complete	~
Jun 19, 2021 00:00	Michael Weaver	Complete	~
Jun 18, 2021 00:00	Michael Weaver	Complete	~
Jun 18, 2021 00:00	Michael Weaver	~	~
Jun 17, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 17, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 16, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 16, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 15, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 15, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 14, 2021 00:00	Kathryn Harding	Complete	~
Jun 14, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 13, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 13, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 12, 2021 00:00	Marcy Cocchiola	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jun 12, 2021 00:00	Michael Weaver	Complete	~
Jun 11, 2021 00:00	Michael Weaver	Complete	~
Jun 11, 2021 00:00	Michael Weaver	Complete	~
Jun 10, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 10, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 09, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 09, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 08, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 08, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 07, 2021 00:00	Kathryn Harding	Complete	~
Jun 07, 2021 00:00	Karen Veary-Santos	Complete	~

Jun 04, 2021

Clinical note

Date	Time	Note Author
Jun 04, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2 <input type="checkbox"/> Proliferative pododermatitis (canker) <input type="checkbox"/> Radiograph

Subjective

Update.  
Keeper reports that the proliferative pododermatitis has had a large increase in size overnight up the carpus. Patient is still moving around on it, but occasionally blowing on it and swinging it out. Very hot to the touch this morning per staff. Did treatments as usual this morning.  
Reached out to two elephant experts for feedback. May consider adding in metronidazole as can be rectally administered. Will have to order.  
Advised staff that will need to bring her in early in the afternoon - plan to take radiographs of the foot and sample collection.

Objective

Patient was very BAR. Eager to participate. Putting full weight on it and doing well. Was not hot to the touch and she allowed manipulation of the lesion. The skin pieces sticking out were painful to manipulation and would not participate if these were accidentally touched.  
The lesion has increased dorsally above the cuticle now. Large amount of vascular, white, crabmeat-like tissue exposed that extends an additional 4 cm above the old lesion and an extra 2 cm wide. The pieces appear viable along the lateral and medial margins of the lesion. There is little change the ventral section or the lateral section at this time.

Assessment

increased in size - unsure if from increased activity, moisture from rain, from discontinuing the TMS or combination.

Plan

Swab taken of new/old margin inbetween tissues for aerobic/anaerobic culture and sensitivity.  
Radiographs taken of left front - digits 1, 2 and 3. Can see where the proliferative pododermatitis is deviating the P3 laterally. No evidence of osteomyelitis at this time.  
Section of new white crabmeat tissue taken for histopathology to University of Florida.  
Given Excede/Gentamicin injectable for topical application (1:1).  
To monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Preliminary Biopsy Diagnosis

Proliferative pododermatitis (canker)

Onset Date  
Jun 04, 2021 00:00

Responsible Clinician  
Erica Lipanovich

Resolution Date  
Jun 04, 2021 00:00

Notes/Comments

Diagnoses & Procedure

Final Biopsy Diagnosis

Proliferative pododermatitis (canker)

Onset Date  
Jun 04, 2021 00:00

Responsible Clinician  
Erica Lipanovich

Resolution Date  
Jun 04, 2021 00:00

Notes/Comments

Diagnoses & Procedure

Procedure

Radiograph

Onset Date  
Jun 04, 2021 00:00

Responsible Clinician  
Erica Lipanovich

Resolution Date  
Jun 04, 2021 00:00

Notes/Comments

Sample

Sample Detail

Collection Date/Time  
Jun 04, 2021 00:00

Sample Type  
Tissue

Anatomical Source/Tissue  
Left front digit 2

Additives/Preservatives  
Formalin

Collection Method  
~

Collected By  
Erica Lipanovich

Reason  
~

Exclude from reference intervals  
No

Sample Quality

Additional Characteristics  
~

Degraded  
No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 04, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

 Jun 04, 2021 00:00

Sample Type

 Tissue

Anatomical Source/Tissue

 Left front digit 2

Additives/Preservatives

 Formalin

Collection Method

 ~

Collected By

 Erica Lipanovich

Reason

 ~

Exclude from reference intervals

 No

Sample Quality

Additional Characteristics

 ~

Degraded

 No

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 04, 2021	~/~	Available	~/~/~

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

 Jun 04, 2021 00:00

Sample Type

 Tissue

Anatomical Source/Tissue

 Left front digit 2

Additives/Preservatives

 Transport media

Collection Method

 Swab

Collected By

 Erica Lipanovich

Reason

 ~

Exclude from reference intervals

 No

Sample Quality

Additional Characteristics

 ~

Degraded

 No

Initial Holding Conditions

Initial Holding Temp.

 ~

Initial Holding Duration

 ~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jun 04, 2021	~/~	Available	ANTECHUSA/3/3

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Jun 04, 2021

Requested By

Erica Lipanovich

Laboratory

ANTECHUSA

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

Culture,Anaerobic

TEST	RESULTS	ADULT REFERENCE RANGE
SOURCE	SWAB	
-	Comments: LEFT FRONT DIGIT 2	
Final Report	06/09/2021	
ORGANISM	No anaerobic bacteria isolated	

Culture, Aerobic

TEST	RESULTS	ADULT REFERENCE RANGE
SOURCE	SWAB	
-	Comments: LEFT FRONT DIGIT 2	
Preliminary #1	06/06/2021	
SOURCE		
-		
Preliminary #3	06/08/2021	
Preliminary #4	06/09/2021	
Final Report	06/10/2021	
ORGANISM	Pantoea agglomerans	
	Comments: Heavy growth	
Organism #2	Citrobacter freundii	
Organism #3	Enterococcus species	

ENTEROCOCCUS SENSITIVITIES

	#1	#2	#3	#4	#5	
TE ST	Results					ADULT REFERENCE RANGE
AM PIC ILLI N CL			S			

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

TE ST	#1	#2	#3	#4	#5	Results	ADULT REFERENCE RANGE
AV AM OX			S				
AZI TH RO MY CIN			R				
CH LO RA MP HE NIC OL			S				
CL ARI TH RO MY CIN			S				
DO XY CY CLI NE			R				
EN RO FL OX ACI N			S				
ER YT HR OM YCI N			S				
Ge nta mic in (Hi gh Co nc.)			S				
Ma rbo flox aci n			S				
Str ept om yci n (Hi gh Co nc.)			S				
Comments: Enterococcus Sensitivity Profile Information ***** Aminoglycosides, when used alone, are ineffective against enterococci. Combining an aminoglycoside with ampicillin or amoxicillin can be effective if this combination is synergistic. Resistance to high concentrations of gentamicin or streptomycin indicates that these combinations are NOT synergistic and should not be used. Erythromycin and azithromycin are not recommended for treatment of lower urinary tract enterococcal infections, regardless of the sensitivity result. Clarithromycin is suitable for lower urinary tract infections. Cephalosporins (all classes) and potentiated sulfonamides are not tested because they are always ineffective against Enterococci. Clavamox offers no treatment advantages over amoxicillin or ampicillin for enterococcal infections.							

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

#1 #2 #3 #4 #5						
TEST	Results		ADULT REFERENCE RANGE			
Cephalothin	R	R				
AMIKACIN	S	S				
AMPICILLIN	R	R				
CHLORAMPHENICOL	S	S				
CLAVAMOX	R	R				
DOXYCYCLINE	S	S				
ENROFLOXACIN	S	S				
GENTAMICIN	R	S				
Marbofloxacin	S	S				
Neomycin	S	S				
TETRACYCLINE	S	S				
TMP / SULFA	S	S				

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Aerobic Culture	Taxon Result - Pantoea agglomerans / Pantoea agglomerans		~	~	~	No
Secondary Result	heavy growth					
Aerobic Culture	Taxon Result - Citrobacter freundii / Citrobacter freundii		~	~	~	No
Aerobic Culture	Taxon Result - Enterococcus / Enterococcus		~	~	~	No

Sample Detail (GSN: S-PGW21-005713)			
Collection Date/Time	Jun 04, 2021 00:00	Collection Method	Swab
Sample Type	Tissue	Collected By	Erica Lipanovich
Anatomical Source/Tissue	Left front digit 2	Reason	~
Additives/Preservatives	Transport media	Exclude from reference intervals	No

Biopsy Detail

Submission	
Date Submitted	Jun 04, 2021
Submitted By	Erica Lipanovich
Recent History/Observations Note	
Resubmission of tissue as lesion has extended cranial/dorsally	
Sample Information	
Sample ID/GSN	S-PGW21-005706
Sample Type	Tissue
Anatomical Source/Tissue	Left front digit 2
Biopsy Collection Date	Jun 04, 2021 00:00
Additives/Preservatives	Formalin
Collected By	Erica Lipanovich
Status	Available

Case Info	
Pathology Case Number	~
Parties to get copy of final report	~
Responsible Pathologist	Erica Lipanovich
Responsible Resident	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Workflow Notes and Additional Case Comments

~

Biopsy Preliminary Examination

Biopsy Info

Gross Examination By

Erica Lipanovich

Report Written Date

Jun 08, 2021

Biopsy Tissue/Description

White crabmeat like tissue along dorsal left front, digit two cuticle that has extended above the cuticle.

Preliminary Diagnosis

Diagnoses

Diagnosis	Standardized Diagnosis
~	Proliferative pododermatitis (canker)

Initial Biopsy Comments & Interpretation

~

Samples & Tests

Samples

Sample Type/Anatomical Source	Preservative
Tissue/Left front digit 2	Formalin

Laboratory	Test Name	Result	Evaluation	Status
~	~	~	~	~

Histopathology

Tissue Processing

Tissue Trim Date

~

Trimmed By

~

Tissue Processing Submission Date

~

Tissue Processed Completion Date

~

External Laboratory

University of Florida  
Veterinary Diagnostic  
Laboratories

Reference Number

A21-214

Histopathology Info

Histopathology Report Date

Jun 08, 2021

Histopathology Report By

~

Responsible Pathologist

Erica Lipanovich

Histopathology Report

CLINICAL DIAGNOSIS: Proliferative pododermatitis vs SCC  
FINAL ANATOMIC OR ETIOLOGIC DIAGNOSIS:  
Intracellular edema, multifocal, 1. moderate, epidermis.  
COMMENTS: The section is composed of the superficial epidermis exhibiting moderate intracellular edema (or ballooning degeneration). Intracellular edema can be associated with a proliferative pododermatitis; however, definitive diagnosis of this condition is hindered by the lack of stratum basale and dermis in these sections. Evidence of neoplasia is not observed in these sections, but similar to diagnosing proliferative pododermatitis, the lack of stratum basale and underlying dermis limits interpretation.  
SAMPLE SUBMITTED: Proliferative pododermatitis – increased in size dramatically  
GROSS DESCRIPTION: Received in a container of 10% neutral buffered formalin is a 0.6x0.4x0.3cm tan, firm, smooth, wedge-shaped tissue. The tissue is bisected and placed in cassette 1. No tissue remains in the container.  
MICROSCOPIC DESCRIPTION:  
SLIDE 1 Skin (2 sections, 2 levels)  
The section is composed of stratum corneum through stratum spinosum. Throughout all layers, keratinocytes are mild to markedly enlarged with increased cytoplasmic pallor and occasionally condensed to pyknotic nuclei. Multifocally, keratinocytes lose adhesion to neighboring cells and become so enlarged that they rupture, leaving ectatic, clear spaces filled with fibrillar debris.  
Robert Ossiboff, DVM, PhD, Diplomate ACVP

Histopathology Diagnosis

Diagnosis	Standardized Diagnosis
~	Proliferative pododermatitis (canker)

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Finalize

Finalization Date

Jun 08, 2021

Responsible Pathologist

Erica Lipanovich

Responsible Resident

~

Final Summary

~

Biopsy Case Info for Husbandry Staff (Husbandry Note)

~

Addendum

Date	Note	Reported By
~	~	~

Audit Trail

Record locked by Erica Lipanovich on Jun 08, 2021 at 15:59

Jun 02, 2021

Clinical note

Date

Jun 02, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Update.

Keeper reports that patient is moving well still. The front left digit 2 was not warm to the touch this morning and the surround area was also not warm. No swelling noted. She did defecate out part of the enrofloxacin this morning about 10 minutes after administration.

To continue to monitor.

E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Jun 01, 2021

Clinical note

Date

Jun 01, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☐ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Cryotherapy.

Keepers report she is still very suspicious of the oral medications and spitting out the ibuprofen occasionally.

Moving around a lot more and swaying again. Seems to be feeling well since the discontinuation of the TMS. Taking rectal medications well.

Eating well.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Objective

Assessment of lesion  
There is moderate amount of heat present to the dorsal aspect of digit two and three but no heat present to the nail areas. Nonpainful on palpation.

The dorsal aspect of the skin discoloration to the ventral rim of the lesion is 13.75 cm in height and 7.0 cm in width for the total affected area. From top to bottom for descriptions: The dorsal dark brown triangle of induration has decreased in size to 1.75 cm in height and 5.75 cm in length. The yellow to white, papillae to crabmeat like material is C-shaped and dry - it starts at the dorsal medial of the nail cuticle and wraps around to the lateral aspect of the toe. It is 9.5 cm in total length, 6 cm in height on the dorsal aspect and curves around to 3.75 cm in width at the ventral/lateral section of the toe. The tissue along the dorsal C-shape is more yellow and compact in consistency. The toe nail on the medial aspect is attached. Underneath the nail is necrotic tissue which is 6 cm in length and 3 cm in width that can be seen at this time. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe. There is some mucoid white purulent debris in this section. It is approximately 4.5 cm wide by 3.5 cm in height.

Assessment

proliferative pododermatitis - still present and changing.  
No evidence of osteomyelitis at this time.

Plan

Cryotherapy performed to the lateral section of tissue - there was a large piece of crabmeat tissue hanging on the ventral section. Once this section was frozen, gently pulled it off. There was some slight bleeding but no indications of pain when removed. There was some bleeding from this area - cryofreezed this section to prevent further bleeding. Attempted to go into the dorsal section of the yellow, compact tissue area and she pulled away indicating that this probably caused some discomfort. Did not go into the dorsal section. Remained on the lateral side.

Stressed to keepers that will need blood in the next week for monitoring purposes and radiographs of the feet can start.

Advised keepers to continue to monitor if the heat in the foot continues to stay, may have to add in the TMS again if it persists.  
No changes to treatment regimen at this time.  
To monitor closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

May 28, 2021

Clinical note

Date	Time	Note Author
May 28, 2021	00:00	Lisa Bonanni
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Note Subtype: General

Notes/Comments

Cryotherapy perfomed on the dorsal aspect of the toenail.

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

May 27, 2021

Clinical note

Date	Time	Note Author
May 27, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Assessment and cryotherapy.

Objective

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 23, 2021

Clinical note

Date

May 23, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Cryotherapy.  
Keepers report that oral compliance of the TMS is getting very difficult.  
Trying to find PK studies for rectal administration but there are none. May need to discontinue the TMS orally for now as need her to continue to take her ibuprofen.

Objective

Assessment of lesion  
The dorsal aspect of the skin discoloration to the ventral rim of the lesion is 11.5 cm in length and 7.5 cm in width for the total affected area. From top to bottom for descriptions:  
The dorsal light brown to yellow triangle of induration has decreased in size to 3.75 cm in height and 7 cm in width. The white, papillae to crabmeat like material is C-shaped - it starts at the dorsal medial of the nail cuticle and wraps around to the lateral aspect of the toe. It is 9.5 cm in total length, 4.5 cm in height on the dorsal aspect and curves around to 4 cm in width at the ventral/lateral section of the toe. The toe nail on the medial aspect is attached. Underneath the nail is necrotic tissue which is 4.5 cm in length and 3.5 cm in width. There is a moist mix of white tissue and necrotic tissue along the slipper margin on the ventral toe. There is some mucoid white purulent debris in the section. It is 2 cm in width and 4.5 cm in height.

Assessment

Proliferative pododermatitis - changing

Plan

May attempt to take another tissue sample later this week for re-submission to Univesity of Florida again from a different location.  
Cryotherapy performed of the lateral and ventral lesion today. Ran out of the cryotherapy canisters. Will have to order more immediately.  
  
Discussed with an elephant expert via phone if TMS could be absorbed rectally - no. May just discontinue for now and see if we can get compliance better and then restart at a later date.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 20, 2021

Clinical note

Date

May 20, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Cryotherapy.  
Keeper reports that it appear that the lateral nail edge has finally broken free.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Taking rectal medications well but oral compliance with TMS is getting difficult as she is suspicious of everything keepers give her.  
Seems more comfortable today.

Objective

The dorsal triangular section of skin seems to be even thinner and almost papilla like - early proliferative tissue?  
With the nail edge released, can see some black necrotic tissue directly behind it of about 1 cm in size, but unable to get to it without causing significant discomfort.  
There is an odor present. Small amount of purulent debris noted around the necrotic tissue. The lateral aspect where the nail edge had been attached now has large, 1 cm white crabmeat like tissue present.

Assessment

no significant changes

Plan

Cryotherapy performed today to the entire affected tissue including the dorsal crescent area and the ventral aspect under the nail.  
Did great for the therapy.  
To continue to monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 16, 2021

Clinical note

Date	Time	Note Author
May 16, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Cryotherapy performed today to the entire lesion.  
Patient did great and participated for the entire procedure! No evidence of pain during the entire procedure and able to get the entire lesion, top and bottom.  
Excede (200 mg/ml): gentamicin (100 mg/ml) at a 1:1 given for topical application later today.  
Keepers report that she is getting more difficult to get the TMS into orally and no longer blowing on the lesion today.

Objective

Assessment of lesion: Increased in size again on the dorsal aspect. There is some induration on the dorsal area that is triangular in shape, yellow in coloration and approximately 5 cm in height and 7 cm wide at the base. Total for the dorsal lesion is 9 cm by 6 cm. The total is 6 cm wide by 5 cm along the ventral lesion. There is a 1 cm pink granulation-like tissue along the lateral middle area of the lesion that is smooth and round in appearance. There is less then 25 % necrotic tissue present along the ventral lesion. No odor. There was a very small amount of white purulent debris over about 25% of the lesion in general this morning. The lateral aspect of the nail is still attached but by mm only. Skin edge has definitely split dorsally. The skin edge is ragged in appearance, especially along the dorsal lateral induration area. No pitting edema present. Mildly warm to the touch. Nonpainful.

Assessment

proliferative pododermatitis - increasing in size but slowing.

Plan

To continue with treatment plan for now and continue monitoring very closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 15, 2021

Clinical note

Date	Time	Note Author
May 15, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

**Subjective**  
  
Update.  
Keepers reported that this elephant was seen a few times today blowing on her front right nail defect.  
Vet staff to evaluate tomorrow.  
E Lipanovich, DVM

**Objective**  
  
~

**Assessment**  
  
~

**Plan**  
  
~

**Animal Care Staff Medical Summary**  
  
~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 13, 2021

**Clinical note**

Date

Time

Note Author

May 13, 2021

00:00

Erica Lipanovich

Significant

Private

Active Problems

No

No

☒ Proliferative pododermatitis (canker), Left front digit 2

**Subjective**  
  
Recheck.  
Keepers report that this patient is taking the rectal and oral medications well.  
Noted the lesion has grown even more in the last few days.

**Objective**  
  
Agree - the lesion is now extending more dorsal over the cuticle 5 cm height by 8 cm. It is a large amount of white, crabmeat like material that is mildly moist. The skin appears to have stretched out directly over the middle of the toe nail and extended dorsally. There is no erythema or odor present. No heat and does not seem painful. The nail is attached on the medial side only with 6 cm of normal looking cuticle. The ventral lateral aspect of the nail is about 4 cm in width and 6 cm in length. There is no black necrotic tissue present at this time. The white crabmeat tissue is extended over and now touching the medial aspect of the third digit and there is no interdigital space present any longer. The nail on the medial side is attached by a thin 3 mm section of skin and cuticle.

**Assessment**  
  
proliferative pododermatitis lesion of the second digit on left front - increasing

**Plan**  
  
Performed today - a section of the white crabmeat like granulation tissue was removed and submitted to University of Florida for histopathology. Cryotherapy performed only twice as elephant declined to participate after that. Topical application of Excede:gentamicin mixture applied at end of day.  
Mannuka honey ordered today as well as more enrofloxacin.  
  
Plan  
Keepers are to continue with twice daily soakings and the epsom salt packings are previously directed.  
Cryotherapy is to be performed two to three times weekly. After cryotherapy, application of the 1:1 Excede:Gentamicin mixture is to be applied.  
In between cryotherapies, topical application of mannuka honey is to be performed.  
Rectal administration of enrofloxacin is to continue at 7.5 mg/kg (20,445 mg or 20.45 gm) once daily until further notice.  
Oral administration of TMS at 22 mg/kg twice daily until further notice.  
Oral administration of ibuprofen at 6.6 mg/kg twice daily until further notice.  
The elephant podiatrist is scheduled to come monthly for now.  
Weekly scoring of the lesion with vet staff and elephant staff will be performed.  
Daily temperature will be monitored for the toe/foot.  
Foot radiographs, cultures and histopathology to be performed as needed.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**  
  
~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

May 13, 2021 00:00

Sample Type

Tissue

Anatomical Source/Tissue

Left front digit 2

Additives/Preservatives

Formalin

Collection Method

Sharp dissection / cut off a piece

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
May 13, 2021	~/~	Available	UFLVDL/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

May 13, 2021

Requested By

Erica Lipanovich

Laboratory

UFLVDL

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Notes/Comments

COMMENTS: The submitted biopsy sample was composed of the superficial epidermis without the presence of the basal layers (stratum basale) or underlying dermis. While the histopathological features including the keratinocyte ballooning and the lack of terminal cornification were consistent with proliferative pododermatitis, the lack of stratum basale limits a definitive diagnosis. Moreover, the lack of stratum basale and dermis in the samples also hinders our ability to definitively rule out any neoplastic processes. Deeper biopsies would be necessary to rule out squamous cell carcinoma.

SAMPLE SUBMITTED: Proliferative pododermatitis lesion biopsy

GROSS DESCRIPTION: Received is a container of 10% neural buffered formalin labeled with patient information "Elephant, #5, Ruth, 05/13/21, foot lesion". In the container is an irregular, white to grey to light brown, firm, 3.5 x 3 x 1.5 cm, tissue. The presumptive surgical margin is inked by the prosector.

MICROSCOPIC DESCRIPTION:

SLIDE 1-2 Biopsy sample from left front digit 2 (11 sections)

Most sections are superficial stratified squamous epithelium that composed of the stratum corneum through the stratum spongiosum without the stratum basale. The stratum corneum contains terminally differentiated keratinocytes often with retained, shrunken nuclei and complete loss of cellular details supported by eosinophilic homogeneous to fibrillar material (parakeratosis). Affecting approximately 90% of the stratum granulosum and stratum spongiosum in multifocal to coalescing areas, the keratinocytes are moderately to markedly enlarged and have abundant, clear to light eosinophilic cytoplasm, hyperchromatic to pyknotic nuclei, and undulating but distinct cytoplasmic membranes (ballooning degeneration). At the periphery of the islands of ballooning keratinocytes, there are often small numbers of lacuni encircled by a thin eosinophilic membrane and filled with eosinophilic homogenous material to clear space admixed with keratin. No argyrophilic fungal hyphae or bacterial organisms were detected in the examined sections via GMS stain and Gram stain, respectively.

Robert Ossiboff, DVM, PhD, Diplomate ACVP

lat:5/18/2021 Ming Lo, DVM, PhD, Resident

Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Microscopic findings	Pododermatitis, proliferative (presumptive), with ballooning degeneration and 1. parakeratosis, focally extensive, marked, chronic, biopsy sample from the left front digit 2		~	~	~	No

Sample Detail (GSN: S-PGW21-005678)

Collection Date/Time	May 13, 2021 00:00	Collection Method	Sharp dissection / cut off a piece
Sample Type	Tissue	Collected By	Erica Lipanovich
Anatomical Source/Tissue	Left front digit 2	Reason	~
Additives/Preservatives	Formalin	Exclude from reference intervals	No

May 11, 2021

Clinical note

Date	Time	Note Author
May 11, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Elephant podiatrist here for consultation.

Objective

After spending time watching how Ruth was moving around, how she is loading and offloading weight in her steps, and how she is bearing weight when stationary, it was clear that a large contributing factor to the issue in the affected toe (FL D2) is biomechanical force (which we all know because of her severe conformation deviations). We did a full assessment of all feet and toes to look for indicators of developing issues and we applied some corrective trimming to try to relieve pressure on any affected tissues. Details are as follows:

**Front Left (D2):** There should not be any more trimming done to the lesion or the immediate area for at least 2 weeks. The remaining small piece of nail in the center should be left to loosen on its own as more tissue fails. The large piece of nail that is still intact posterior to the lesion was long on the bottom, putting it in contact with the substrates in a way that was causing the affected tissue to shift/move with each step. We shaped the remaining bottom edge of the nail to shorten it and bevel it up into the nail face to try to reduce some of that movement to allow the affected tissue to "rest". The associated pad in that same area was shortened and blended back into the center of the pad.

**Back Left:** The bottom of the foot showed evidence of increased and uneven weight bearing. There were changes in shape to the heel and signs of weight bearing in the nails. The elephant is pushing a lot of weight backwards from the front towards this foot causing the changes. The nails were all shortened and rounded and some defects in the pad were cleaned up and trimmed back to remove the overhanging pad that was forming deep shelves. The D2 nail had a significant cavity defect in the bottom and on the front face of the nail that needed to be cleaned and trimmed to remove deteriorated tissue. The face of the nail had significant shape changes and was flaring at the bottom and becoming concave . The nail was trimmed and re-shaped to relieve focal pressure and to help it better distribute any force it receives. There was also a tear/defect in the pad tissue directly

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

posterior to the D5 nail. The defect is on the bottom of the pad and connects up to the side of the foot as well. Pad tissue was shortened around the defect and trimmed to be more smooth and to remove focal pressure on the affected area. The D5 nail was also shaped and shortened to relieve pressure on the affected tissue.

**Back Right:** This foot needs maintenance but there were no immediate signs of defects developing.

Assessment

~

Plan

We were able to address the main defects and developing issues to some degree and the items I would have liked to have addressed were secondary in priority.

Plan to reschedule in 4-6 weeks another session with elephant podiatrist.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 09, 2021

Clinical note

Date	Time	Note Author
May 09, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Update.  
Discussed with staff first thing in the morning to increase the enrofloxacin from 5 mg/kg/day to 7.5 mg/kg per day. Keeper staff to start today. Can be once daily or split in half and given twice daily. Make sure diluted in water completely before administer.  
Culture is still pending.

Telemedicine consultation with elephant expert occurred today.

Objective

The left front digit 2 is moderately swollen today. There is moderate heat also to this digit only. No swelling above the digit or to the surrounding toes. The white proliferative crabmeat tissue is bulging out around the cuticle along the lateral half of the nail. The nail is barely still attached to the skin on the lateral aspect. The white tissue slowly turns into a black spongy tissue along the ventral margin of the nail and along the slipper edge. There is some vascularization present along the lateral interdigital area of about 1 cm in size. No odor present at this time. Slipper still remains intact and no evidence of inflammation present still. Still just the second digit affected on the left front only. She is full weight bearing and very BAR.  
Left rear - slipper edge along the caudal fourth nail area is still the same size. More open now but nonpainful today. There is still a 2.5 cm white track noted but more superficial than last evaluation.

Assessment

proliferative pododermatitis - left front digit.  
left rear - more superficial

Plan

- Per consult,
- very good prognosis since there is only one digit affected.
  - need to keep the secondary infection under control (stated that C/S is still pending)
  - no trimming with a knife unless absolutely necessary, use cryotherapy and/or medical maggot therapy
  - need to keep the other three feet healthy to help keep this foot nonpainful.
  - elephant podiatrist is scheduled to come out this week for assessment.
  - recommend continue with the espom salt packing and the soakings as already doing.
  - C/S helpful but not always indicative of what is actually going on within the lesion.
  - may need to have a wedge placed on the lateral aspect of the foot to help with weight bearing in the future
  - this is a long term problem and treatment will take minimum 6-9 months, realistically 12-18 months.
  - may not always have to be on antibiotics but for now is necessary. Will more then likely be on antibiotics for 3-6 months.
  - biopsy should be sent to University of Florida (plan to collect a sample for submission to U of F)
  - can also do a topical therapy of 1:1 Excede:Gentamicin at the end of the day.
  - details given on medical maggot therapy and training that would be necessary in order for that to be successful.

As patient had responded previously to the TMS, going to restart that pending the culture and sensitivity.  
To monitor closely.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

May 09, 2021

Start Date

May 09, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

May 09, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,160 mg

Dosage Amount

6.295 mg/kg

Administrated Dose Quantity

21.45 count

Frequency

twice a day (bid)

Duration

30days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

800 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Jun 07, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Jun 06, 2021 00:00	Kathryn Harding	Complete	~
Jun 06, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 05, 2021 00:00	Michael Weaver	Complete	~
Jun 05, 2021 00:00	Michael Weaver	Complete	~
Jun 04, 2021 00:00	Michael Weaver	Complete	~
Jun 04, 2021 00:00	Michael Weaver	Complete	~
Jun 03, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 03, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 02, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Jun 02, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 01, 2021 00:00	Karen Veary-Santos	Complete	~
May 31, 2021 00:00	Karen Veary-Santos	Complete	~
May 31, 2021 00:00	Karen Veary-Santos	Complete	~
May 30, 2021 00:00	Karen Veary-Santos	Complete	~
May 30, 2021 00:00	Karen Veary-Santos	Complete	~
May 29, 2021 00:00	Joseph Golden	Complete	~
May 29, 2021 00:00	Joseph Golden	Complete	~
May 28, 2021 00:00	Joseph Golden	Complete	~
May 28, 2021 00:00	Joseph Golden	Complete	~
May 24, 2021 00:00	Kathryn Harding	Complete	~
May 24, 2021 00:00	Karen Veary-Santos	Complete	~
May 23, 2021 00:00	Kathryn Harding	Complete	~
May 23, 2021 00:00	Karen Veary-Santos	Complete	~
May 22, 2021 00:00	Joseph Golden	Complete	~
May 22, 2021 00:00	Joseph Golden	Complete	~
May 21, 2021 00:00	Joseph Golden	Complete	~
May 21, 2021 00:00	Joseph Golden	Complete	~
May 20, 2021 00:00	Karen Veary-Santos	Complete	~
May 20, 2021 00:00	Karen Veary-Santos	Complete	~
May 19, 2021 00:00	Karen Veary-Santos	Complete	~
May 19, 2021 00:00	Karen Veary-Santos	Complete	~
May 18, 2021 00:00	Kathryn Harding	Complete	~
May 18, 2021 00:00	Karen Veary-Santos	Complete	~
May 17, 2021 00:00	Kathryn Harding	Complete	~
May 17, 2021 00:00	Karen Veary-Santos	Complete	~
May 16, 2021 00:00	Kathryn Harding	Complete	~
May 16, 2021 00:00	Karen Veary-Santos	Complete	~
May 15, 2021 00:00	Michael Weaver	Complete	~
May 15, 2021 00:00	Michael Weaver	Complete	~
May 14, 2021 00:00	Michael Weaver	Complete	~
May 14, 2021 00:00	Michael Weaver	Complete	~
May 13, 2021 00:00	Michael Weaver	Complete	~
May 13, 2021 00:00	Michael Weaver	Complete	~
May 12, 2021 00:00	Michael Weaver	Complete	~
May 12, 2021 00:00	Michael Weaver	Complete	~
May 11, 2021 00:00	Karen Veary-Santos	Complete	~
May 11, 2021 00:00	Karen Veary-Santos	Complete	~
May 10, 2021 00:00	Karen Veary-Santos	Complete	~
May 10, 2021 00:00	Karen Veary-Santos	Complete	~
May 09, 2021 00:00	Karen Veary-Santos	Complete	~
May 09, 2021 00:00	Karen Veary-Santos	Complete	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

May 09, 2021

Start Date

May 09, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

May 09, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Sulfatrim-DS [800:160] (960 mg Solid > Tablet) (Sulfamethoxazole; Trimethoprim)

Dose Amount

59,972 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

22 mg/kg

Duration

30days

Concentration Of Drug

960 mg

Administrated Dose Quantity

62.471 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 63 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Jun 07, 2021	5 / Asian elephant / MIG12-29545888 Sulfatrim-DS [800:160] treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
May 23, 2021 00:00	Karen Veary-Santos	None	~
May 22, 2021 00:00	Joseph Golden	50%	~
May 22, 2021 00:00	Joseph Golden	50%	~
May 21, 2021 00:00	Joseph Golden	Complete	~
May 21, 2021 00:00	Michael Weaver	50%	~
May 20, 2021 00:00	Karen Veary-Santos	Complete	~
May 20, 2021 00:00	Kathryn Harding	Complete	~
May 19, 2021 00:00	Kathryn Harding	Complete	~
May 19, 2021 00:00	Karen Veary-Santos	50%	~
May 18, 2021 00:00	Kathryn Harding	Complete	~
May 18, 2021 00:00	Karen Veary-Santos	Complete	~
May 17, 2021 00:00	Kathryn Harding	Complete	~
May 17, 2021 00:00	Kathryn Harding	Complete	~
May 16, 2021 00:00	Kathryn Harding	Complete	~
May 16, 2021 00:00	Karen Veary-Santos	70%	~
May 14, 2021 00:00	Michael Weaver	Complete	~
May 14, 2021 00:00	Michael Weaver	Complete	~
May 13, 2021 00:00	Michael Weaver	Complete	~
May 13, 2021 00:00	Michael Weaver	Complete	~
May 12, 2021 00:00	Michael Weaver	Complete	~
May 12, 2021 00:00	Michael Weaver	Complete	~
May 11, 2021 00:00	Michael Weaver	Complete	~
May 11, 2021 00:00	Karen Veary-Santos	Complete	~
May 10, 2021 00:00	Karen Veary-Santos	Complete	~
May 10, 2021 00:00	Karen Veary-Santos	Complete	~
May 09, 2021 00:00	Karen Veary-Santos	Complete	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	May 09, 2021	Date	May 09, 2021
Start Date	May 09, 2021 00:00	Measurement Value	2,726 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Treatment Detail			
Treatment Item/Drug	Enrofloxacin		
Dose Amount	20,445 mg	Frequency	once a day (sid)
Dosage Amount	7.5 mg/kg	Duration	30days
Administrated Dose Quantity	20,445 mg	Delivery Route	Instillation, rectum (enema)
		Loading Dose	~
		Form of Drug	Semisolid
			Concentration Of Drug
			~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Response

Clinical Response

Adverse Effects

Adverse Effects Note:

~

Staff Instructions

Give 3 scoops dissolved completely in water rectally either once daily or 1.5 scoops dissolved completely in water rectally twice daily for 30 days. Remove as much feces as possible prior to rectal administration.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Jun 07, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Jun 09, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 08, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 07, 2021 00:00	Kathryn Harding	Complete	~
Jun 05, 2021 00:00	Kathryn Harding	Complete	~
Jun 04, 2021 00:00	Michael Weaver	Complete	~
Jun 03, 2021 00:00	Karen Veary-Santos	Complete	~
Jun 02, 2021 00:00	Karen Veary-Santos	50%	~
Jun 01, 2021 00:00	Karen Veary-Santos	Complete	~
May 31, 2021 00:00	Karen Veary-Santos	Complete	~
May 30, 2021 00:00	Karen Veary-Santos	Complete	~
May 29, 2021 00:00	Michael Weaver	Complete	~
May 28, 2021 00:00	Michael Weaver	80%	~
May 27, 2021 00:00	Karen Veary-Santos	None	~
May 26, 2021 00:00	Karen Veary-Santos	Complete	~
May 25, 2021 00:00	Karen Veary-Santos	Complete	~
May 24, 2021 00:00	Karen Veary-Santos	Complete	~
May 23, 2021 00:00	Karen Veary-Santos	Complete	~
May 22, 2021 00:00	Michael Weaver	Complete	~
May 21, 2021 00:00	Michael Weaver	Complete	~
May 20, 2021 00:00	Karen Veary-Santos	Complete	~
May 19, 2021 00:00	Karen Veary-Santos	70%	~
May 18, 2021 00:00	Karen Veary-Santos	Complete	~
May 17, 2021 00:00	Karen Veary-Santos	Complete	~
May 16, 2021 00:00	Michael Weaver	Complete	~
May 15, 2021 00:00	Michael Weaver	Complete	~
May 14, 2021 00:00	Michael Weaver	Complete	~
May 13, 2021 00:00	Kathryn Harding	Complete	~
May 12, 2021 00:00	Kathryn Harding	Complete	~
May 11, 2021 00:00	Karen Veary-Santos	Complete	~
May 10, 2021 00:00	Karen Veary-Santos	Complete	~
May 09, 2021 00:00	Karen Veary-Santos	Complete	~

May 07, 2021

Clinical note

Date	Time	Note Author
May 07, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2
Subjective		
<p>Update.</p> <p>The foot lesion is still growing slowly a little everyday. Keeper reports that there is a section of black necrotic tissue that is hanging along the very lateral aspect of the lesion. Okayed removal of that with a very clean and sharp hoof knife.</p> <p>Swabbed underneath the nail for aerobic culture and sensitivity.</p> <p>Still receiving 5 mg/kg per day of enrofloxacin daily rectally. The foot is still very warm but patient is full weight bearing, no longer blowing on it with her trunk and still is nonpainful.</p> <p>Blood collected yesterday showed a mild leukocytosis with some toxic changes to monocytes indicative of infection.</p> <p>Discussed with keeper staff that may add in a second antibiotic depending on culture results or increase the enrofloxacin.</p> <p>Sample to be submitted to University of Miami for electrophoresis, fibrinogen and acute phase proteins.</p> <p>E Lipanovich, DVM</p>		
Objective		
~		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info	
Date Written	May 07, 2021
Start Date	May 07, 2021 00:00
Prescribed By	Erica Lipanovich
Prescribed For	1 animal
Reason For Treatment	Medical

Weight Info	
Date	May 07, 2021
Measurement Value	2,726 kg
Estimate	Yes
Exclude From Reference Intervals	Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

6,800 mg

Dosage Amount

2.5 mg/kg

Administrated Dose Quantity

6,800 mg

Frequency

twice a day (bid)

Duration

7days

Delivery Route

Instillation, rectum (enema)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give one scoop (6.8g) rectally twice daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
May 13, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
May 08, 2021 00:00	Michael Weaver	Complete	~
May 08, 2021 00:00	Michael Weaver	Complete	~
May 07, 2021 00:00	Michael Weaver	Complete	~
May 07, 2021 00:00	Michael Weaver	Complete	~

Sample

Sample Detail

Collection Date/Time

May 07, 2021 00:00

Sample Type

Tissue

Anatomical Source/Tissue

Left front digit 2

Additives/Preservatives

Transport media

Collection Method

Swab

Collected By

Michael Weaver

Reason

~

Exclude from reference intervals

No

Sample Quality

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
May 07, 2021	~/~	Available	ANTECHUSA/1/1

Notes

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail		Sample Quality	
Date Requested	May 07, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	ANTECHUSA	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Notes/Comments					
Cephalothin	R				
AMIKACIN	S				
AMPICILLIN	R				
CHLORAMPHENICOL	R				
CLAVAMOX	R				
DOXYCYCLINE	R				
ENROFLOXACIN	S				
GENTAMICIN	S				
Marbofloxacin	R				
Neomycin	S				
TETRACYCLINE	R				
TMP / SULFA	R				

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Aerobic Culture	Taxon Result - Citrobacter amalonaticus / Citrobacter amalonaticus		~	~	~	No
Secondary Result	heavy growth					

Sample Detail (GSN: S-PGW21-005679)			
Collection Date/Time	May 07, 2021 00:00	Collection Method	Swab
Sample Type	Tissue	Collected By	Michael Weaver
Anatomical Source/Tissue	Left front digit 2	Reason	~
Additives/Preservatives	Transport media	Exclude from reference intervals	No

May 06, 2021

Clinical note

Date	Time	Note Author
May 06, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2
Subjective		
Phone consult with a fourth elephant expert regarding proliferative pododermatitis treatment and suggestions (See bullet points below).		
Staff meeting occurred today regarding the rapid increase in changes recently, elected to bring in an elephant expert for consultation regarding treatment and trimmings within the		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

next few days.

Erica Lipanovich, DVM

Addendum: blood collected and brought to hospital for CBC and chemistry.

Keeper reports that the left front foot is now hot to the touch and she is holding her trunk to it like it is painful. Flights booked for two consultants.

Advised keepers to give a second dose of enrofloxacin rectally tonight.

E Lipanovich, DVM

Objective

~

Assessment

~

Plan

- Cryotherapy to aid **debridement**. Used to aggressively "hourglass out" all the abnormal tissue at once, but have found that approach often causes such a profound, sudden change in the biodynamics of the foot that it causes more instability. As long as you have pressure relieved and can reach where you need with medications, being gentle and a little more conservative, but assessing daily (or as needed) results in a quicker return to normalcy and a more comfortable patient in the meantime. Also have learned that it's tremendously helpful to work together with your husbandry staff on routine maintenance of the rest of the foot, so that the affected nail and its neighbors are kept raised off the ground to alleviate pressure.
- Usually **soak** for 10 minutes SID to BID in warm water using black rubber feed tubs that are about 1 foot deep, so they cover a good bit of the skin above the nail as well as the whole foot. We have used a variety of things in our soaks. Combine Epsom salts (1-4 cups per large rubber soak bucket) with an antimicrobial (Chlorhexidine, Betadine) or even Apple Cider Vinegar. Rinse the foot well after the soak. If you can, let the foot dry out for 20 or so minutes before putting on topicals seems to result in those staying in place better.
- There are several **topicals** we use routinely. If you are dealing with proliferative tissue is that white, smooshy, sensitive type, we have had decent success by using an equine paste called Proudsoff (44% cupric sulfate) topped with Wonder Dust to press it in and hold it on. The devitalized tissue firms up and gets stained blue, so it's easier to see what needs to come off at the next debridement session. It doesn't seem to irritate them on application. Also can use an equine product called Artimud for associated nail cracks. It's naturally antifungal/antimicrobial and stays in really well, and a little bit goes a long way. If your culture indicates something stronger, I would definitely recommend contacting a compounding pharmacy. They have been very helpful in getting products with the right consistency to get (and stay) where they need to be.
- And, obviously, pain management such as an NSAID +/- gabapentin, which seems to work well for pododermatitis as well.
- Also played around quite a bit with an epoxy patch application + antimicrobial wound sponge or epoxy mesh that enables soaks. There was definitely a learning curve with these, but it was well worth it for the cases we used it for.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail	
Collection Date/Time	May 06, 2021 00:00
Sample Type	Whole Blood
Anatomical Source/Tissue	~
Additives/Preservatives	~
Collection Method	~
Collected By	Lisa Bonanni
Reason	~
Exclude from reference intervals	No

Initial Holding Conditions	
Initial Holding Temp.	~
Initial Holding Duration	~

Sample Quality	
Additional Characteristics	~
Degraded	No
Pre-Sampling Conditions	
Fasting Duration	< 2 hours
Restraint Type	Physical
Activity	Moderate activity

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
May 06, 2021	~/~	Available	NEW BEDFO/11/11

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

May 06, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

Phlebotomy

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Low activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
May 06, 2021	~/~	Available	UMAWLAB/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

May 06, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Physical

Activity

Moderate activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
May 06, 2021	~/~	Available	NEW BEDFO/14/14
May 06, 2021	~/~	Available	UMAWLAB/11/11

Notes

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

May 06, 2021

Requested By

Erica Lipanovich

Laboratory

UMAWLAB

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

~

Test Requests & Test Results

~

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Fibrinogen	400 mg/dL	Global sp RI: 200 - 708   380 [400] N=338 (37)	~	No	No	No

Sample Detail (GSN: S-PGW21-005672)

Collection Date/Time

May 06, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Test & Result

Test Request Detail

Date Requested

May 06, 2021

Requested By

Erica Lipanovich

Analysis Start Date & Time

~

Analysis By

Lisa Bonanni

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

reactive platelets  
1+ toxic monocytes- rare

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
HCT	38 %	Global sp RI: 26.5 - 45.4   34.1 [33.5] N=2165 (134)	~	No	No	No
Est. WBC count	9.4 *10^3 cells/μL	Global sp RI: 0 - 19   8 [7] N=136 (23)	~	No	~	No
Heterophil % [m]	25 %	Global sp RI: 14.2 - 74.0   32.2 [32.0] N=45 (22)	~	No	No	No
Lymphocyte % [m]	4 %	Global sp RI: 8.0 - 72.0   33.1 [30.0] N=4291 (186)	Low	No	No	No
Monocyte % [m]	70 %	Global sp RI: 1.0 - 64.1   29.6 [31.0] N=4075 (185)	High	No	No	No
Eosinophil % [m]	1 %	Global sp RI: 0.0 - 9.3   2.5 [2.0] N=3328 (175)	~	No	No	No
Basophil % [m]	0 %	Global sp RI: 0.0 - 2.0   0.2 [0.0] N=1982 (141)	~	No	No	No
Est. Thrombocytes	increased		~	~	~	No
Blood parasites	none seen		~	~	~	No
Anisocytosis	rare (1+)		~	~	~	No
Polychromasia	none seen		~	~	~	No

Sample Detail (GSN: S-PGW21-005665)			
Collection Date/Time	May 06, 2021 00:00	Collection Method	~
Sample Type	Whole Blood	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result			
Test Request Detail		Sample Quality	
Date Requested	May 06, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Analysis Start Date & Time	~	Clarity	~
Analysis By	Lisa Bonanni	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No
Notes/Comments			
hemolysis 2+			

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results						
Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Albumin unspecified	3.2 g/dL	Not calculated	~	~	~	No
Alk. Phos.	40 U/L	Global sp RI: 39 - 268   110 [91] N=3926 (190)	~	No	No	No
ALT	<5 U/L	Global sp RI: 0 - 21   6 [4] N=2415 (170)	~	No	No	No
Amylase	DNR U/L	Global sp RI: 70 - 12,127   4,581 [4,350] N=856 (122)	~	No	No	No
Tot. Bili.	0.2 mg/dL	Global sp RI: 0.0 - 0.5   0.2 [0.2] N=3797 (185)	~	No	No	No
BUN	12 mg/dL	Global sp RI: 5.5 - 18.4   11.3 [11.0] N=4179 (193)	~	No	No	No
Ca	11.1 mg/dL	Global sp RI: 9.1 - 12.0   10.5 [10.5] N=4176 (201)	~	No	No	No
Phos	5.5 mg/dL	Global sp RI: 3.1 - 7.5   4.9 [4.8] N=3946 (192)	~	No	No	No
Creatinine	1.1 mg/dL	Global sp RI: 0.7 - 2.0   1.3 [1.3] N=4030 (195)	~	No	No	No
Glucose	78 mg/dL	Global sp RI: 51 - 123   83 [83] N=4113 (183)	~	No	No	No
Na	130 mmol/L	Global sp RI: 124 - 138   130 [130] N=3864 (190)	~	No	No	No
K	5.2 mmol/L	Global sp RI: 3.8 - 5.7   4.6 [4.5] N=3839 (189)	~	No	No	No
Total Protein	8.5 g/dL	Global sp RI: 6.5 - 9.6   8.0 [8.0] N=4296 (188)	~	No	No	No
Globulin	5.4 g/dL	Global sp RI: 3.4 - 6.4   4.8 [4.8] N=3740 (172)	~	No	No	No

Sample Detail (GSN: S-PGW21-005664)			
Collection Date/Time	May 06, 2021 00:00	Collection Method	~
Sample Type	Serum	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Test & Result			
Test Request Detail		Sample Quality	
Date Requested	May 06, 2021	Color	~
Requested By	Erica Lipanovich	Color Intensity	~
Laboratory	UMAWLAB	Clarity	~
Analysis Start Date	~	Consistency	~
Analysis Equipment	~	Additional Characteristics	~
Insufficient Sample	No	Degraded	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Serum Amyloid A	78.2 mg/L	Global sp RI: 0.1 - 129.9   13.9 [2.2] N=40 (21)	~	No	~	No
Total Protein	8.0 g/dL	Global sp RI: 6.5 - 9.6   8.0 [8.0] N=4296 (188)	~	No	No	No
A:G ratio	0.65 ratio	Global sp RI: 0.1 - 1.0   0.7 [0.7] N=2104 (121)	~	No	No	No
Pre-albumin EPH	0.28 g/dL	Global sp RI: 0.00 - 0.42   0.08 [0.00] N=92 (19)	~	No	No	No
Albumin EPH	2.88 g/dL	Global sp RI: 2.46 - 4.48   3.29 [3.21] N=193 (44)	~	No	No	No
α-1 Globulin EPH	0.07 g/dL	Global sp RI: 0.07 - 1.10   0.63 [0.68] N=188 (40)	~	No	No	No
α-2 Globulin EPH	1.2 g/dL	Global sp RI: 0.31 - 1.15   0.65 [0.60] N=191 (39)	High	No	No	No
β-1+2 Globulin EPH	2.07 g/dL	Global sp RI: 0.56 - 2.93   1.52 [1.40] N=101 (30)	~	No	No	No
γ Globulin EPH	1.5 g/dL	Global sp RI: 0.31 - 3.33   1.74 [1.70] N=172 (40)	~	No	~	No
β-1 Globulin EPH	0.98 g/dL	Global sp RI: 0.05 - 2.99   1.24 [1.10] N=110 (28)	~	No	~	No
β-2 Globulin EPH	1.09 g/dL	Global sp RI: 0.07 - 1.65   0.81 [0.87] N=45 (19)	~	No	~	No

<b>Collection Date/Time</b>	May 06, 2021 00:00	<b>Collection Method</b>	~
<b>Sample Type</b>	Serum	<b>Collected By</b>	Lisa Bonanni
<b>Anatomical Source/Tissue</b>	~	<b>Reason</b>	~
<b>Additives/Preservatives</b>	~	<b>Exclude from reference intervals</b>	No

## Clinical note

## Subjective

Page 186 of 242

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Objective

She is very itchy as she just finished a bathe. Can tell she has scratched her right ear margin again and is larger but did not measure today. The tail lesions are the same. Keepers are not going to put any moisturizer on it today to see if this prevents her from developing microabscesses. The scabs that are there appears quiescent and the same. No redness or inflammation at all. The left front, nail 2 - has grown more along the top of the nail bed. Can see where the nail is separating away along the top further. It is now approximately 7 cm in length with white proliferative tissue coming out along the nail. The tissue over the thin lateral section of nail is approximately 1 cm today, The ventral lateral nail lesion is approximately 7 cm long and 3 cm in height. There is a 2 cm by 1 cm section of black crabmeat like tissue along the ventral edge of the intact nail along the slipper that is falling off. Gently removed. No bleeding and didn't indicate any pain at all. There is a very vascular section of tissue that is white in coloration just below the nail defect of 2 cm by 3 cm. Malodorous despite soakings. Left rear, slipper edge just caudal of the fourth nail has a new lesion that is painful. It is 5 mm wide and goes diagonally from the slipper up just above the margin of the slipper approximately 1 cm. There is some excess skin present around the dorsal slipper margin where it is tracking. This is painful. Can see the tissue is white in coloration in the center.

Assessment

proliferative pododermatitis - increasing on the left front digit 2. Will most likely loose the nail.  
track present on the left rear slipper edge.  
Tail quiescent  
right ear margin - more open, again

Plan

Keeper is to continue with packing. To continue consulting with elephant experts as to best courses of treatment.  
Started cleaning the left rear track - this is a very old abscess site. Keeper is to try to open it for better cleaning and visualization.  
To continue with rectal administration of enrofloxacin. Patient is taking it very well.  
Icthammol ointment should arrive soon to pack the front left nail bed. Instructed keepers that it will need to be rinsed thoroughly off.  
To continue with twice daily soakings and monitoring pending consultants suggestions.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 03, 2021

Clinical note

Date	Time	Note Author
May 03, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Rectal administration of enrofloxacin.  
Operantly conditioned and allowed rectal administration of baytril - removed several boluses prior to administration.  
She did great and accepted it really well.  
Keeper reports that she spit out the ibuprofen again this morning. Advised keepers to keep trying but she will get better now that she is no longer receiving the baytril orally. More then likely, despite the antibitter, was still getting a metallic aftertaste.  
To continue to monitor for now.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

May 02, 2021

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Clinical note

Date

May 02, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

**Subjective**

Recheck.  
Keeper reports that this elephant does not like the oral baytril. Discussed with keeper to switch to rectal administration. Will need to dissolve the baytril completely in water prior to administration.  
To assist with administration tomorrow.  
Rechecked the left front digit 2

**Objective**

The nail bed lesion has 1.5 cm wide by 5.5 cm long of white proliferative tissue coming from the skin above the nail, which is still intact.  
The ventral nail defect lesion is 8 cm in length and 4 cm wide.  
There is 1.5 cm of excess pink and white proliferative tissue coming from the very middle interdigital space between 2 and 3 coming along the nail edge. Unsure if this is a new section of proliferative tissue or if it is just additional tissue from the ventral lesion.  
Very well vascularized along the ventral lesion but only white tissue seen along the nail defect.

**Assessment**

~

**Plan**

Keeper reports that elephant seems to be showing some indications the salt pack is causing discomfort. To discuss other options of packing with elephant experts.  
To switch to rectal administration as this elephant is now suspicious of any food items given by staff as need her to reliably receive the baytril.  
Keeper reported at the end of the day that she spit out the ibuprofen.  
To do first rectal administration with staff tomorrow.  
E Lipanovich, DVM

**Animal Care Staff Medical Summary**

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Apr 30, 2021

Clinical note

Date

Apr 30, 2021

Time

00:00

Note Author

Lisa Bonanni

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

**Note Subtype:** General  
**Notes/Comments**

To start enrofloxacin today

**Animal Care Staff Medical Summary**

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Basic Info

Date Written

Apr 30, 2021

Start Date

Apr 30, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

~

Weight Info

Date

Apr 30, 2021

Measurement Value

2,726 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Enrofloxacin

Dose Amount

6,800 mg

Dosage Amount

2.5 mg/kg

Administrated Dose Quantity

6,800 mg

Frequency

once a day (sid)

Duration

7days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give one scoop (6.8g) orally once daily for 7 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
May 06, 2021	5 / Asian elephant / MIG12-29545888 Enrofloxacin treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
May 06, 2021 00:00	Karen Veary-Santos	50%	Remaining dose for this day missed in AM
May 06, 2021 00:00	Karen Veary-Santos	50%	Some was found stuck in the syringe bulb
May 05, 2021 00:00	Karen Veary-Santos	Complete	~
May 04, 2021 00:00	Karen Veary-Santos	Complete	~
May 03, 2021 00:00	Karen Veary-Santos	Complete	~
May 02, 2021 00:00	Karen Veary-Santos	Complete	Did not want to take it orally, gave it to her in garlic bread, then would not take anything else. She stopped listening to us and put herself in the corner. Started giving it to her rectally on 5/3.
May 01, 2021 00:00	Michael Weaver	Complete	~
Apr 30, 2021 00:00	Michael Weaver	Complete	~

Apr 28, 2021

Clinical note

Date

Apr 28, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Subjective

Update.  
Keeper reports that the left front digit 2 was noticeably warm this morning. Nonpainful and not lame.  
To start on TMS again but once the enrofloxacin has arrived from the compounding pharmacy, then plan to switch.  
To continue to monitor  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written	Apr 28, 2021
Start Date	Apr 28, 2021 00:00
Prescribed By	Erica Lipanovich
Prescribed For	1 animal
Reason For Treatment	Medical

Weight Info

Date	Apr 28, 2021
Measurement Value	2,726 kg
Estimate	Yes
Exclude From Reference Intervals	Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Sulfatrim-DS [800:160] (960 mg Solid > Tablet) (Sulfamethoxazole; Trimethoprim)

Dose Amount

60,544 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

22.210 mg/kg

Duration

14days

Concentration Of Drug

960 mg

Administrated Dose Quantity

63.067 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 63 tablets orally twice daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
May 11, 2021	5 / Asian elephant / MIG12-29545888 Sulfatrim-DS [800:160] treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Apr 30, 2021 00:00	Michael Weaver	Complete	D/C
Apr 29, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 29, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 28, 2021 00:00	Karen Veary-Santos	Complete	~

Apr 27, 2021

Clinical note

Date

Apr 27, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Consultation.

Reached out to three different experienced elephant veterinarians for consultation regarding the sudden increase in growth of the proliferative pododermatitis lesion to the left front digit 2.

The following recommendations:

1) Minimal to no trimming of the excess tissue for 4 weeks

2) Frequent measurements and scoring of the lesion (make a 1-3 scoring for the lesion)

3) Start packing with epsom salt paste for 15-20 minutes daily. Rinse off quickly when done. This will act to osmotically draw out fluid without making it soggy.

4) Continue with once or twice daily soakings

4) Start enrofloxacin at 2.5 mg/kg either orally or rectally for 4-6 weeks. (range is routinely 5-20 mg/kg but paper by Sanchez PK study 2005 demonstrates therapeutic levels at 2.5 mg/kg).

5) Wait to start the canker paste.

Objective

~

Assessment

This is likely caused by an underlying conformation issue that is causing her to not bear weight equally. This means this will never be cured and will likely never resolve or recur.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Can only manage and/or decrease the flare ups.

Plan

The reason she is not painful is because there is no osteomyelitis, which is supported by the radiographs taken this week that showed no evidence of osteomyelitis. The trimming seems to stimulate further growth of the tissue, which is why it is recommended to not trim it. This tissue is very similar and yet different they granulation tissue in horses.

This tissue is prediposed to developing squamous cell carcinoma so future biopsies may be warranted.

Future therapy may include medical maggot therapy or cryotherapy.

This will take 6-12 months to see significant improvement and will more than likely look worse before it looks better.

Calling pharmaceutical companies for bulk pricing.

To start on the salt paste application.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Apr 26, 2021

Prescription/Treatment

Basic Info

**Date Written** Apr 26, 2021

**Start Date** Apr 26, 2021 00:00

**Prescribed By** Erica Lipanovich

**Prescribed For** 1 animal

**Terminated On** Apr 26, 2021

**Termination Reason** Switched drug due to additional information

**Reason For Treatment** Medical

Weight Info

**Date** Apr 26, 2021

**Measurement Value** 2,726 kg

**Estimate** Yes

**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Benzoyl Metronidazole

Dose Amount

1 tsp

Dosage Amount

~

Administrated Dose Quantity

1 tsp

Frequency

every 2 days (q2d)

Duration

2doses

Delivery Route

Topical

Loading Dose

~

Form of Drug

~

Concentration Of Drug

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Apply to lesion after being soaked and dried once every two days for two treatments. Wear gloves when applying.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
~	~	~	~

Apr 25, 2021

Clinical note

Date

Apr 25, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Radiograph

☐ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.  
Keeper reports that the proliferative lesion has increased in size and now extending above the nail bed.  
Still soaking twice daily - AM soak is epsom salts and betadine and PM is apple cider vinegar, intermittently with chlorhexidine.  
Still receiving ibuprofen and not indicating any discomfort or pain.

Objective

Keeper had already done some trimming of the proliferative tissue at recheck with sterilized hoof knife.  
There is a 3 by 4 cm section of nail attached at the lateral dorsal section. Can see where it has separated completely from the dorsal aspect of the nail bed itself. There is proliferative white, moist tissue visible at this section. The nail section still attached is very thin. The ventral aspect of the proliferative tissue is white and finger like papilla present along the middle section. Well vascularized but not actively bleeding. There is no heat or discharge present from the nail bed or to the interdigital section between 2 and 3. Nonpainful to touch.

Assessment

proliferative pododermatitis (canker) - increased significantly in size.

Plan

After soaked and trimmed, the foot was allowed to air dry. Topical coppertox applied.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Procedures:

1) Multiple radiographs of V/D left front, digits 1-3 were taken with operant conditioning. Excellent technique, positioning was okay. Can see the proliferative tissue. P3 shows no evidence of osteomyelitis at this time. Can see where the nail is separating around the proliferative tissue. Seems well circumscribed at this time.

2) Cryotherapy performed to the ventral tissue (freeze/thaw)

Plan:

To consult with multiple elephant experts to determine best course of action for level of aggressive debridement.

To also add in "canker paste" but need to verify recipe first to make inhouse.

To have keepers perform a swab for aerobic C/S later this week after had more tissue removed sterily.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

Procedure

Radiograph

Onset Date

Apr 25, 2021 00:00

Responsible Clinician

Erica Lipanovich

Resolution Date

Apr 25, 2021 00:00

Notes/Comments

Left front - digits 1-3 with primary focus was digit 2. No evidence of osteomyelitis. Can see where there is separation of the middle section of the nail occurring.

Apr 20, 2021

Clinical note

Date

Apr 20, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☐ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Vaccination and recheck lesions.

Keepers report that this elephant seems to be laying more on the right side again so the lesions on the left face and left hip are healing well.

Concerned that the tail is developing more microabscesses despite switching to hypoallergenic moisturizer.

Keepers also report that this patient remains full weight bearing on the front right foot and showing no indications of discomfort when cleaned and trimmed still.

Objective

BAR; no ocular or nasal discharge.

Euphneic respiratory rate.

The right pinna lateral margin appears to have some fresh scratches on the lateral and caudal margin. The caudal margin appears longer again. Approximately 12 cm in length but 1mm (ventral) at it smallest and 3 cm at it widest (dorsal). Approximately 5-6 mm in depth.

The left hip - there is a 7 mm small superficial opening on the cranioventral area of the lesion left open. The rest of the lesion is now flush with the surrounding skin and healthy pink epithelium is present.

The right front digit 2 nail defect with canker tissue was not closely evaluated today. Nail however is growing out well and the tissue is much less prominent. Ambulating normally on it.

The left zygomatic arch - both lesions are now 4-5 mm in size and shallow as well.

The distal 1/2 of the tail - the large triangle shaped lesion has a large bed of fibrin present but there is a new scab present on the right side of it. The triangular shape hasn't changed in size but the new scab next to it appears to be oblong shaped and 2 by 4 cm in length. Firmly attached. Nonpainful. There are 6 new small 5 mm microabscesses present to the distal 1/3rd of the tail. The scabs have easily come off and are approximately 5 mm in depth. Nonpainful to touch and cleaning. There are circular to oval in shape. Healthy granulation tissue is underneath when the purulent debris is removed.

Assessment

appears healthy for vaccine

scratching the right pinna

new microabscesses to the tail

left hip - improved

left zygomatic arch - improved.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

left front, digit 2 - proliferative pododermatitis; improved

Plan

Continue with scrubbing the tail and ear daily with dilute chlorhexidine solution and apply mupiricin to the tail lesions for now. Discontinue any moisturizing agents to the tail for now. Continue with monitoring the right ear and daily application of vitamin A/D.

Given 2 ml in right tricep of Vetera EWT+WNV (serial 3530045A, expiration 23 April 2021) IM. No blood aspirated prior to administration. To monitor for vaccine reaction.

Released to the exhibit.

Elect to not give rabies this year as the titers are adequate levels.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Apr 20, 2021  
**Start Date** Apr 20, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Preventative Health

Weight Info

**Date** Apr 20, 2021  
**Measurement Value** 2,726 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Vetera EWT + WNV (Liquid > Solution) (Eastern equine encephalitis virus vaccine (inactivated); Tetanus toxoid; West Nile virus vaccine (inactivated); Western equine encephalitis virus vaccine (inactivated))

Dose Amount

2 ml

Frequency

once

Form of Drug

Solution

Dosage Amount

0.001 ml/kg

Duration

1doses

Concentration Of Drug

~

Administrated Dose Quantity

2 ml

Delivery Route

Injection

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

~

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
Apr 20, 2021	Erica Lipanovich	2 ml

Administration Records

Administration Date/Time	Administered By	Success	Notes
Apr 20, 2021 00:00	Vet Tech Intern	Complete	right tricep

Apr 12, 2021

Clinical note

Date

Apr 12, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.

This elephant was seen scratching her tail the other day. Keeper requested an update on visual evaluation.

Also to recheck the front left foot lesion. This elephant has continued to remain nonpainful and still receiving daily soakings.

Objective

Front right digit lesion on the ventral/lateral aspect has increased in size and the nail has grown out a significant amount over the last two weeks. There is a large amount of white and black highly vascular canker granulation tissue present that is approximately 4 by 4.5 cm in size. It is triangular in shape. The nail has regrown along the dorsal aspect and can see where it is discolored and loose. The dorsal interdigital section of skin is slightly hyperkeratotic but is no longer swollen and can see where the cuticle has receded slightly from the tail but is intact and healthy at this time. No heat present.

Left hip - lesion is very shallow and pale pink in coloration. Has decreased in size by 2-3 mm in sections. No erythema present and nonpainful.

Tail - the middle tail lesion does appear slightly abraded but is very shallow and almost flush with the surrounding skin. Minimal change in size and shape however. There is some clear to yellow crusting scab along the border. Moist but no erythema present. Excellent re-epilialization present. The three previous microabscesses that were note previously - the dorsal two have filled in with tissue and have a scab present over them that is flush with the surrounding skin and firmly attached. The ventral point scab was very moist and when scrubbed lightly with chlorhexidine to get the sand off, it fell off. The underlying soft tissue is pale pink to white in coloration. It is the same depth and size as previously reported.

Assessment

Right front - proliferative tissue still present and slowly being pared away. Still nonpainful

Left hip - slowly healing

tail - dorsal three lesions are resolving. The ventral tail tip is the same.

Printed: Nov 18, 2021

Buttonwood Park Zoo

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Plan

Discussed with keeper trimming a triangular dorsal section of nail to allow the tissue to come out and relieve some pressure despite this patient not indicating it is painful. Will be able to aggressively trim this tissue at that time.  
To continue with daily cleaning and application of topical treatments as previously directed.  
To discuss with elephant staff more cryofreezing sessions this week to the nail lesion.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Apr 09, 2021

Prescription/Treatment

Basic Info

Date Written

Apr 09, 2021

Start Date

Apr 09, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Apr 09, 2021

Measurement Value

2,752 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,160 mg

Dosage Amount

6.235 mg/kg

Administrated Dose Quantity

21.45 count

Frequency

twice a day (bid)

Duration

30days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

800 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items			
Date	Title	Assigned To	Done
May 08, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records		
Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records			
Administration Date/Time	Administered By	Success	Notes
May 09, 2021 00:00	Michael Weaver	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

May 08, 2021 00:00	Michael Weaver	Complete	~
May 07, 2021 00:00	Michael Weaver	Complete	~
May 07, 2021 00:00	Michael Weaver	Complete	~
May 06, 2021 00:00	Karen Veary-Santos	Complete	~
May 05, 2021 00:00	Karen Veary-Santos	Complete	~
May 05, 2021 00:00	Karen Veary-Santos	Complete	~
May 04, 2021 00:00	Karen Veary-Santos	Complete	~
May 04, 2021 00:00	Michael Weaver	Complete	~
May 03, 2021 00:00	Karen Veary-Santos	Complete	~
May 03, 2021 00:00	Karen Veary-Santos	Complete	~
May 02, 2021 00:00	Karen Veary-Santos	Complete	~
May 02, 2021 00:00	Karen Veary-Santos	Complete	~
May 01, 2021 00:00	Michael Weaver	Complete	~
May 01, 2021 00:00	Michael Weaver	Complete	~
Apr 30, 2021 00:00	Michael Weaver	Complete	~
Apr 30, 2021 00:00	Michael Weaver	Complete	~
Apr 29, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 29, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 28, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 28, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 27, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 27, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 26, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 26, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 25, 2021 00:00	Kathryn Harding	Complete	~
Apr 25, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 24, 2021 00:00	Kathryn Harding	Complete	~
Apr 24, 2021 00:00	Kathryn Harding	Complete	~
Apr 23, 2021 00:00	Michael Weaver	Complete	~
Apr 23, 2021 00:00	Michael Weaver	Complete	~
Apr 22, 2021 00:00	Michael Weaver	Complete	~
Apr 22, 2021 00:00	Michael Weaver	Complete	~
Apr 21, 2021 00:00	Kathryn Harding	Complete	~
Apr 21, 2021 00:00	Michael Weaver	Complete	~
Apr 20, 2021 00:00	Kathryn Harding	Complete	~
Apr 20, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 19, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 19, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 18, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 18, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 17, 2021 00:00	Michael Weaver	Complete	~
Apr 17, 2021 00:00	Michael Weaver	Complete	~
Apr 16, 2021 00:00	Michael Weaver	Complete	~
Apr 16, 2021 00:00	Michael Weaver	Complete	~
Apr 15, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 15, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 14, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 14, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 13, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 13, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 12, 2021 00:00	Kathryn Harding	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Apr 12, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 11, 2021 00:00	Kathryn Harding	Complete	~
Apr 11, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 10, 2021 00:00	Michael Weaver	Complete	~
Apr 10, 2021 00:00	Michael Weaver	Complete	~
Apr 09, 2021 00:00	Michael Weaver	Complete	~
Apr 09, 2021 00:00	Michael Weaver	Complete	~

Mar 30, 2021

Sample

Sample Detail

Collection Date/Time

Mar 30, 2021 00:00

Sample Type

Feces

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Mar 30, 2021	~/~	Available	NEW BEDFO/2/2

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Mar 30, 2021

Requested By

Erica Lipanovich

Analysis Start Date & Time

~

Analysis By

Lisa Bonanni

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

~

Test Requests & Test Results

~~

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Sheather's/Centrifug	No parasites found		~	~	~	No
Direct Exam.	No parasites found		~	~	~	No

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail (GSN: S-PGW21-005505)

Collection Date/Time	Mar 30, 2021 00:00	Collection Method	~
Sample Type	Feces	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Mar 29, 2021

Clinical note

Date	Time	Note Author
Mar 29, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

**Subjective**

Recheck/Monitoring.  
Keeper reports that yesterday evening was her last oral antibiotic dosage. There is has been minimal soft tissue swelling present to the left front digits. Still receiving twice daily soakings. Have been aggressively trimming the excess granulation tissue and necrotic tissue from the second digit. Also trimmed some of the nail for better access to the tissue. She continues to remain nonpainful and full weight bearing to the foot.

**Objective**

The lateral 1/3rd of the nail has been removed and can see where the tissue is much more prominent. Approximately 4.5 cm by 3 cm on the ventral aspect of the defect and is more round then crescent shaped at this time. The top of the lateral nail where it is still attached is starting to crack a small amount along the granulation lesion. Can also see where the very lateral edge is starting to separate slightly from the skin. The yellow thickened sking of the interdigital space between 2 and three has resolved and peeled off. There is only a small amount of the thickened skin left. The second nail is raised and can see where more of the excess granulation tissue is pushing the nail away from the bottom of the slipper. Can see where keepers have trimmed the second nail edge to relieve pressure and allow more of the tissue to come out. Very well vascularized in places.

**Assessment**

proliferative pododermatitis/canker tissue lesion of the second nail bed on the left front foot.

**Plan**

Advised keepers that will discontinue the oral antibiotic for now and see if can maintain site with twice daily soakings. Also advised keepers to continue trimming daily to every other day as patient allows. May want to use more of the copper tox to kill some of the excess tissue for easy of trimming. Also discussed doing more cryotherapy if necessary. To continue to monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Mar 18, 2021

Clinical note

Date	Time	Note Author
Mar 18, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

**Subjective**

Recheck.  
Was soaked yesterday but did not have soaking this morning.

**Objective**

Can see where a fair amount of the tissue was removed but well vascularized on the ventral/central region of the crescent shaped tissue.

**Assessment**

~

**Plan**

Cryofreeze therapy performed with a larger cone for the central area. Got very good penetration to the area. Able to get all of the crescent shaped lesion. To soak again tonight and then trim tomorrow.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Mar 17, 2021

Clinical note

DateTimeNoteAuthor

Mar 17, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.

Objective

The areas that had cryotherapy appear more friable today with the underlying tissue being more vascular then the top layers. The excess tissue seems colder to the touch then yesterday.

Assessment

~

Plan

Advised keepers to go ahead and debrid tisse edges today and to attempt more cryotherapy either tomorrow or the next day depending on sensitivity to the area. To do twice daily soakings today as previous and apply DMSO to the dorsal aspect of the interdigital region of 2 and 3.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Mar 16, 2021

Clinical note

DateTimeNoteAuthor

Mar 16, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo

☒

Proliferative pododermatitis (canker), Left front digit 2

Subjective

Cryotherapy of right front interdigital 2 and 3/digital 2.

Objective

The excess tissue is becoming more prominent along the ventral crescent shaped section. There is also some excess vascular tissue developing along the lateral/ventral margin.  
The warmth to the interdigital region of dorsal 2 and 3 digits has improved and only mildly present. The swelling to the dorsal region that is yellow in coloration is much less as well. The crack along the edge is less prominent.

Assessment

excess canker tissue to digit 2  
interdigital swelling between 2 and 3 has improved since starting antibiotics.

Plan

Procedure:  
Elected to start some cryotherapy with Verruca-Freeze and the large cone for dispersal. Brushed off debris this morning and no soak performed this morning. Utilized cryotherapy along the ventral crescent shaped tissue only. Several times, the tissue froze to the cone when removed. Several ice balls developed as desired.  
No soaking this morning but to do foot soak tonight.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

To debride tissue tomorrow and may perform another freeze/thaw cycle in 48-72 hours depending on the results.

Patient showed no evidence of pain during the procedure and was excellent for it.

There was some oozing of blood from the vascular section of the cankerous tissue.

To attempt larger cones to the area to improve local penetration with less time with foot up for future.

To recheck tomorrow to see how it penetrated.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Mar 14, 2021

Clinical note

Date	Time	Note Author
Mar 14, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.

Keeper reports that the tissue seems to be growing larger along the ventral aspect of the nail defect. Also the nail seems much warmer to the touch and more inflamed.

Has been getting once daily foot soakings with chlorhexidine solution and /or betadine solution.

She seems to be moving slower on the foot as well.

Objective

Observed twice outside in yard today and noted that she was putting the majority of her weight on the front right then on the front left. Seen close to the barn both times.

BAR; eating well. The second and third nail and the dorsal surround soft tissue is much warmer then the rest of the foot. The ventral crescent shaped tissue has doubled in size and is prominent, white with some vascular tissue along the ventral/middle section. The dorsal yellow crust area that is circular in shape is the same size but more prominent and now cracking along the lateral edge. This seems more swollen as well.

Assessment

~

Plan

Restarted on TMS again at 22 mg/kg PO BID for 14 days.

To increase foot soaks to twice daily.

To recheck and to schedule foot radiographs.

Verracruz arrived and to plan on cryotherapy Tuesday.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info		Weight Info	
Date Written	Mar 14, 2021	Date	Mar 14, 2021
Start Date	Mar 14, 2021 00:00	Measurement Value	2,752 kg
Prescribed By	Erica Lipanovich	Estimate	Yes
Prescribed For	1 animal	Exclude From Reference Intervals	Yes
Reason For Treatment	Medical		

Treatment Detail
------------------

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

<b>Treatment Item/Drug</b>	Sulfatrim-DS [800:160] (960 mg Solid > Tablet) (Sulfamethoxazole; Trimethoprim)				
<b>Dose Amount</b>	60,544 mg	<b>Frequency</b>	twice a day (bid)	<b>Form of Drug</b>	Tablet
<b>Dosage Amount</b>	22 mg/kg	<b>Duration</b>	14days	<div>Concentration Of Drug</div>	
<b>Administrated Dose Quantity</b>	63.067 count	<b>Delivery Route</b>	Oral (p.o.)	<div>960 mg</div>	
<b>Loading Dose</b>	~				

Treatment Response

<b>Clinical Response</b>	~
<b>Adverse Effects</b>	~
<b>Adverse Effects Note:</b>	<div>~</div>

Staff Instructions

Give 63 tablets orally twice daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Mar 27, 2021	5 / Asian elephant / MIG12-29545888 Sulfatrim-DS [800:160] treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Administration Records			
Administration Date/Time	Administered By	Success	Notes
Mar 28, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 28, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 27, 2021 00:00	Michael Weaver	Complete	~
Mar 27, 2021 00:00	Michael Weaver	Complete	~
Mar 26, 2021 00:00	Michael Weaver	Complete	~
Mar 26, 2021 00:00	Michael Weaver	Complete	~
Mar 25, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 25, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 24, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 24, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 23, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 23, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 22, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 22, 2021 00:00	Kathryn Harding	Complete	~
Mar 21, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 21, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 20, 2021 00:00	Michael Weaver	Complete	~
Mar 20, 2021 00:00	Michael Weaver	Complete	~
Mar 19, 2021 00:00	Michael Weaver	Complete	~
Mar 19, 2021 00:00	Michael Weaver	Complete	~
Mar 18, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 18, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 17, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 17, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 16, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 16, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 15, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 15, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 14, 2021 00:00	Karen Veary-Santos	Complete	~

Mar 10, 2021

Prescription/Treatment

Basic Info

Date Written

Mar 10, 2021

Start Date

Mar 10, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Mar 10, 2021

Measurement Value

2,752 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,160 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Dosage Amount6.235 mg/kg

Duration30days

Concentration Of Drug800 mg

Administrated Dose21.45 count

Delivery RouteOral (p.o.)

Quantity

Loading Dose~

Treatment Response

Clinical Response~

Adverse Effects~

Adverse Effects Note:

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Apr 08, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Apr 08, 2021 00:00	Michael Weaver	Complete	~
Apr 08, 2021 00:00	Michael Weaver	Complete	~
Apr 07, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 07, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 06, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 06, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 05, 2021 00:00	Kathryn Harding	Complete	~
Apr 05, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 04, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 04, 2021 00:00	Karen Veary-Santos	Complete	~
Apr 03, 2021 00:00	Michael Weaver	Complete	~
Apr 03, 2021 00:00	Michael Weaver	Complete	~
Apr 02, 2021 00:00	Michael Weaver	Complete	~
Apr 02, 2021 00:00	Michael Weaver	Complete	~
Apr 01, 2021 00:00	Michael Weaver	Complete	~
Apr 01, 2021 00:00	Michael Weaver	Complete	~
Mar 31, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 31, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 30, 2021 00:00	Kathryn Harding	Complete	~
Mar 30, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 29, 2021 00:00	Kathryn Harding	Complete	~
Mar 29, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 28, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 28, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 27, 2021 00:00	Michael Weaver	Complete	~
Mar 27, 2021 00:00	Michael Weaver	Complete	~
Mar 26, 2021 00:00	Michael Weaver	Complete	~
Mar 26, 2021 00:00	Michael Weaver	Complete	~

Mar 25, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 25, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 24, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 24, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 23, 2021 00:00	Kathryn Harding	Complete	~
Mar 23, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 22, 2021 00:00	Kathryn Harding	Complete	~
Mar 22, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 21, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 21, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 20, 2021 00:00	Michael Weaver	Complete	~
Mar 20, 2021 00:00	Michael Weaver	Complete	~
Mar 19, 2021 00:00	Michael Weaver	Complete	~
Mar 19, 2021 00:00	Michael Weaver	Complete	~
Mar 18, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 18, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 17, 2021 00:00	Karen Veary-Santos	70%	75%
Mar 17, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 16, 2021 00:00	Kathryn Harding	Complete	~
Mar 16, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 15, 2021 00:00	Kathryn Harding	Complete	~
Mar 15, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 14, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 14, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 13, 2021 00:00	Michael Weaver	Complete	~
Mar 13, 2021 00:00	Michael Weaver	Complete	~
Mar 12, 2021 00:00	Michael Weaver	Complete	~
Mar 12, 2021 00:00	Michael Weaver	Complete	~
Mar 11, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 11, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 10, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 10, 2021 00:00	Karen Veary-Santos	Complete	~

## Clinical note

Date	Time	Note Author
Mar 09, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	<input checked="" type="checkbox"/> Proliferative pododermatitis (canker), Left front digit 2
<b>Subjective</b>  Recheck tail and foot. Keepers report that the tail lesions hasn't been treated today as it is dry and looks to have healed well. Keepers also report that she remains nonpainful on the front right nail defect on ambulation and to the touch.		
<b>Objective</b>  The tail lesion is flush with the rest of the surrounding skin. Thre is normal pigmentation presnet along the lateral edges that is bright pink and normal. The central tear drop shaped lesion has a central yellow scar tissue in the center. It is approximately 2 cm by 1.75 cm (widest). There is a 6 mm yellow crust like material that is hard and flaky. No inflammation and nonpainful to touch. The tail tip lesions have hyperkeratosis of skin present around them and are flush with the surrounding skin of the tail. Right front interdigital lesion of digit 2/3: The dorsal lesion has a thinning yellow appearance to the surrounding skin that is more pronounced - approximately 3 cm in size and circular. The center has a crack present that is showing some black tissue underneath now. It runs central to ventral of the yellow thin lesion. As the defect wraps down to the crescent shaped granulation tissue section, there is a large amount of black coloration along the dorsal half that changes to white tissue. The white tissue appears to be well vascularized and pink in some section. The lateral half to 1/3rd of the nail seems to be deviate out. Does not cause any discomfort to the touch or manipulation of the tissue, either the nail or the defects. Warm to the touch but just mildly compared to the rest of the nails and foot.		
<b>Assessment</b>		

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

tail lesions - resolved.

Plan

To continue with current therapy. Keepers are planning on removing some of the necrotic tissue tomorrow from the ventral section of the defect.  
Had to discontinue the oral TMS as compliance is becoming an issue with this patient.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Mar 02, 2021

Clinical note

DateTimeNote Author

Mar 02, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Update.  
Keeper reports that this patient spit all of the TMS out last night and this morning.  
Elected to discontinue TMS for now as the foot seems stable and to monitor more closely since compliance is so poor.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Feb 28, 2021

Clinical note

DateTimeNote Author

Feb 28, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.  
Keepers report that this patient has remained nonpainful on the front left foot. Been getting the daily foot soakings with dilute betadine and dilute chlorhexidine (separately) and trimming where needed.  
Doing very well with taking medications.  
Remains bright and alert and eating very well.

Objective

The digit 2 on the left front foot = moderate crab meat like material present along the lateral aspect of the ventral nail bed and seems to be going around the toe nail. It is approximately 6 cm by 2 cm in size and crescent shaped. The dorsal interdigital swelling has decreased significantly to about 3.5 cm. There is a small 1 cm cornified area present along the ventral rim of this white area.

Assessment

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Buttonwood Park Zoo

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Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Stable and improving slowly but steadily

Plan

To continue with treatments and to monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Feb 26, 2021

Prescription/Treatment

Basic Info

Date Written

Feb 25, 2021

Start Date

Feb 26, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Feb 25, 2021

Measurement Value

2,740 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Sulfatrim-DS [800:160] (960 mg Solid > Tablet) (Sulfamethoxazole; Trimethoprim)

Dose Amount

60,280 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

22 mg/kg

Duration

5days

Concentration Of Drug

960 mg

Administrated Dose Quantity

62.792 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 63 tablets orally twice daily for 5 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Mar 01, 2021 00:00	Karen Veary-Santos	None	spit them all out
Mar 01, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 28, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 28, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 27, 2021 00:00	Michael Weaver	Complete	~
Feb 27, 2021 00:00	Michael Weaver	Complete	~

Feb 15, 2021

Clinical note

Date

Feb 15, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Recheck.  
Keeper was able to do more trimming of the necrotic tissue present. No indications of pain and held her foot there the entire time.  
Currently soaking with epsom salts and betadine for ten minutes, debriding with a hoof knife and then soaking again. Copper tox application post tissue removal.  
She is moving really well today and not doing the shifting of the front feet like yesterday. Eating well and very BAR.

Objective

The lateral aspect of the nail has been trimmed as well as the tip of digit 2 nail on the left front. There is a moderate amount of tissue protruding into the interdigit space today. The skin above the lateral cuticle is pale yellow to creamy white in coloration. Moderate inflammation is present. Keeper reports that she does not seem tender at all to this area today and is ambulating well on it. The crescent to oval shaped tissue at the end of the nail tip is approximately 5 cm long and 2 cm wide that is wrapping around to the interdigital space between digits 2 and 3. It is white to grey in coloration with some pink tissue visible underneath. Seems swollen to the interdigital space as well as above the lateral cuticle.

Assessment

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Seems more consolidated but larger

Plan

To continue with treatment for now unless gets larger or becomes painful. Then will perform a culture and sensitivity of the tissue.  
May consider some cryofreezing as additional therapy if necessary as well as packing with an antibiotic soaked gauze.  
To monitor very closely.  
Applying DMSO topical gel twice daily for now.  
E Lipanovich, DVM

PM evaluation: the interdigital region of digits 2 and 3 and the dorsal cuticle region is very swollen and is going white in coloration. Very warm to the touch. Does not seem painful. The cuticle above digits 3 is also becoming edematous secondary to this. The tissue on the ventral nail bed is more prominent despite being trimmed this morning. To apply more DMSO tonight.  
To start on oral TMS at 22 mg/kg PO BID for 10 days.  
To do more trimming tomorrow and then to recheck on Wednesday morning. The other bottles of TMS have not arrived (Fed Ex delayed) so will have to discontinue the antibiotic until the new bottle arrives.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Feb 15, 2021  
**Start Date** Feb 15, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Feb 15, 2021  
**Measurement Value** 2,740 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Sulfatrim-DS [800:160] (960 mg Solid > Tablet) (Sulfamethoxazole; Trimethoprim)

Dose Amount

60,280 mg

Frequency

twice a day (bid)

Form of Drug

Tablet

Dosage Amount

22 mg/kg

Duration

10days

Concentration Of Drug

960 mg

Administrated Dose Quantity

62.792 count

Delivery Route

Oral (p.o.)

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 63 tablets orally twice daily for 10 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Feb 24, 2021	5 / Asian elephant / MIG12-29545888 Sulfatrim-DS [800:160] treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Feb 20, 2021 00:00	Michael Weaver	Complete	~
Feb 20, 2021 00:00	Michael Weaver	Complete	~
Feb 19, 2021 00:00	Michael Weaver	Complete	~
Feb 19, 2021 00:00	Michael Weaver	Complete	~
Feb 18, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 18, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 17, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 17, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 16, 2021 00:00	Kathryn Harding	Complete	~
Feb 16, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 15, 2021 00:00	Kathryn Harding	Complete	~
Feb 15, 2021 00:00	Karen Veary-Santos	Complete	~

Feb 14, 2021

Clinical note

Date

Feb 14, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

☒ Proliferative pododermatitis (canker), Left front digit 2

Subjective

Complaint.

Keeper reports that evaluation of the left front digit 2 nail defect that had a white cystic -like lesion has still not opened on its own and appears to have become larger. It is now behind the anterior aspect of the nail and appears to be going dorsally of the cuticle. The skin is turning white.

A: interdigital/nailbed abscess tracking dorsally and ventrally (prolific pododermatitis)

Keeper is doing a epsom salt/betadine foot soak. To trim the ventral aspect of the white cystic structure. Will then soak again and apply copper tox to the area. There is some red

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

coloration like bruising to the plantar slipper around the digit two nail. Seems uncomfortable and is trying to keep pressure off of it.  
To monitor closely.  
May need to try to open this up along the dorsal aspect for flushing the lesion thoroughly.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Diagnoses & Procedure

**Medical Condition/Syndrome/Disorder**  
Proliferative pododermatitis (canker), Left front digit 2

**Onset Date**  
Feb 14, 2021 00:00

**Responsible Clinician**  
Erica Lipanovich

**Confidence Level**  
Confirmed

**Resolution Date**  
~

**Unresolveable**  
No

**Notes/Comments**

Feb 09, 2021

Prescription/Treatment

Basic Info

**Date Written**

Feb 08, 2021

**Start Date**

Feb 09, 2021 00:00

**Prescribed By**

Erica Lipanovich

**Prescribed For**

1 animal

**Reason For Treatment**

Medical

Weight Info

**Date**

Feb 08, 2021

**Measurement Value**

2,740 kg

**Estimate**

Yes

**Exclude From Reference Intervals**

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Mupirocin 2% (20 mg/g Semisolid > Ointment) (Mupirocin)

Dose Amount

1 piece

Dosage Amount

0.000 mg/kg

Administrated Dose Quantity

1 count

Frequency

once a day (sid)

Duration

14days

Delivery Route

Topical

Loading Dose

~

Form of Drug

Ointment

Concentration Of Drug

20 mg/g

Treatment Response

Clinical Response

Health condition improved

Adverse Effects

None

Adverse Effects Note:

~

Staff Instructions

After cleaning gently with diluted chlorhexidine solution, apply thin coat of mupirocin to wounds and then liberally apply Vitamin A/D ointment to the entire area once daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Feb 22, 2021	5 / Asian elephant / MIG12-29545888 Mupirocin 2% treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Feb 23, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 22, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 21, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 20, 2021 00:00	Michael Weaver	Complete	~
Feb 19, 2021 00:00	Michael Weaver	Complete	~
Feb 18, 2021 00:00	Michael Weaver	Complete	~
Feb 17, 2021 00:00	Michael Weaver	Complete	~
Feb 16, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 15, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 14, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 13, 2021 00:00	Michael Weaver	Complete	~
Feb 12, 2021 00:00	Michael Weaver	Complete	~
Feb 11, 2021 00:00	Michael Weaver	Complete	~
Feb 10, 2021 00:00	Michael Weaver	Complete	~

Feb 08, 2021

Clinical note

Date

Feb 08, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

~

Subjective

Recheck.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Keeper reports that there appears to be a new microabscess at the tip of the tail last night. Scrubbed and applied topical therapy - the same as the rest of lesions. Evaluating today and rechecking hip and dorsal tail lesion also.

Objective

The left hip lesion - is about 3 mm in depth today and some of the granulation tissue that was present last week is no longer present today. Keeper had to clean sand out of it this morning where she was laying on that side. The size is the same but definitely deeper. Skin edges are abraded.  
Tail - proximal most lesion on the tail has decreased in size slightly and much more shallow. The skin is now firmly attached to the entire bed of granulation tissue. The yellow central crust of the tear drop now has re-epithelialization occurring from that skin margin to the yellow crust. Clean pale pink bed of granulation tissue.  
Tail - the new microabscess site is the same size and depth as the previous two microabscesses. The dorsal microabscess site is flush with the surrounding skin and has a healthy dry scab present. The middle lesions has a thin layer of white fibrotic tissue over it and less then 1 mm in depth. The distal tail tip lesion is concave and the middle is about 2 mm in depth. Pale pink to white fibrotic tissue is present over it. Nonpainful and not red in coloration.

Assessment

slowly resolving skin lesions to tail.  
left hip - re-opened the pressure sore overnight.

Plan

To continue with topical treatments of mupiricin (new tube give) and vitamin A/D ointment. To continue the tail vetwrap at night to the upper tail lesion for now as it seems to be helping it to resolve much faster then the others.  
To continue to monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

**Date Written** Feb 08, 2021  
**Start Date** Feb 08, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Feb 08, 2021  
**Measurement Value** 2,740 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

Treatment Detail

<b>Treatment Item/Drug</b>	Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)		
<b>Dose Amount</b>	17,160 mg	<b>Frequency</b>	twice a day (bid)
<b>Dosage Amount</b>	6.263 mg/kg	<b>Duration</b>	30days
<b>Administrated Dose Quantity</b>	21.45 count	<b>Delivery Route</b>	Oral (p.o.)
		<b>Loading Dose</b>	~
		<b>Form of Drug</b>	Tablet
		<div>Concentration Of Drug</div> 800 mg	

Treatment Response

**Clinical Response** ~  
**Adverse Effects** ~  
**Adverse Effects Note:**

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Calendar Items

Date	Title	Assigned To	Done
Mar 09, 2021	5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Mar 09, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 09, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 08, 2021 00:00	Kathryn Harding	Complete	~
Mar 08, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 07, 2021 00:00	Kathryn Harding	Complete	~
Mar 07, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 06, 2021 00:00	Michael Weaver	Complete	~
Mar 06, 2021 00:00	Michael Weaver	Complete	~
Mar 05, 2021 00:00	Michael Weaver	Complete	~
Mar 05, 2021 00:00	Michael Weaver	Complete	~
Mar 04, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 04, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 03, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 03, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 02, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 02, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 01, 2021 00:00	Karen Veary-Santos	Complete	~
Mar 01, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 28, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 28, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 27, 2021 00:00	Michael Weaver	Complete	~
Feb 27, 2021 00:00	Michael Weaver	Complete	~
Feb 26, 2021 00:00	Michael Weaver	Complete	~
Feb 26, 2021 00:00	Michael Weaver	Complete	~
Feb 25, 2021 00:00	Michael Weaver	Complete	~
Feb 25, 2021 00:00	Michael Weaver	Complete	~
Feb 24, 2021 00:00	Michael Weaver	Complete	~
Feb 24, 2021 00:00	Michael Weaver	Complete	~
Feb 23, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 23, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 22, 2021 00:00	Kathryn Harding	Complete	~
Feb 22, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 21, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 21, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 20, 2021 00:00	Michael Weaver	Complete	~
Feb 20, 2021 00:00	Michael Weaver	Complete	~
Feb 19, 2021 00:00	Michael Weaver	Complete	~
Feb 19, 2021 00:00	Michael Weaver	Complete	~
Feb 18, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 18, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 17, 2021 00:00	Karen Veary-Santos	Complete	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Feb 17, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 16, 2021 00:00	Kathryn Harding	Complete	~
Feb 16, 2021 00:00	Kathryn Harding	Complete	~
Feb 15, 2021 00:00	Kathryn Harding	Complete	~
Feb 15, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 14, 2021 00:00	Kathryn Harding	Complete	~
Feb 14, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 13, 2021 00:00	Michael Weaver	Complete	~
Feb 13, 2021 00:00	Michael Weaver	Complete	~
Feb 12, 2021 00:00	Michael Weaver	Complete	~
Feb 12, 2021 00:00	Michael Weaver	Complete	~
Feb 11, 2021 00:00	Kathryn Harding	Complete	~
Feb 11, 2021 00:00	Michael Weaver	Complete	~
Feb 10, 2021 00:00	Michael Weaver	Complete	~
Feb 10, 2021 00:00	Kathryn Harding	Complete	~
Feb 09, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 09, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 08, 2021 00:00	Kathryn Harding	Complete	~
Feb 08, 2021 00:00	Karen Veary-Santos	Complete	~

Feb 04, 2021

Clinical note

Date	Time	Note Author	
Feb 04, 2021	00:00	Erica Lipanovich	
Significant	Private	Active Problems	
No	No	~	
Subjective			
Recheck tail lesions. Keepers have continued with daily topical treatment. Have been using vetwrap to the larger lesion at night to prevent sand contamination. She has been taking the treatments well. Keepers report that the large yellow and black scab on the upper lesion came off several days ago.			
Objective			
The lesion is now slightly pear to tear drop shaped. It is approximately 2.5 cm long. The entire lesion is well hydrated. The granulation tissue that is present is a pale pink and clean. The skin edges are loose in a few places but there does appear to be some epithelialization occurring around the lateral sides. There is a central, circular, yellow, crusty scab of about 1 cm in size that is firmly attached. The two previous microabscess lesions were examined. Both are open to show healthy pale pink granulation tissue. The skin edges are loose around it. They are both about 5 mm in size and about 2 mm in depth.			
Assessment			
Healing well.			
Plan			
Advised keepers to continue with current treatment for now. To monitor. E Lipanovich, DVM			
Animal Care Staff Medical Summary			
~			
Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Feb 01, 2021

Clinical note

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Date

Feb 01, 2021

Time

00:00

Note

Erica Lipanovich

Author

Significant

No

Private

No

Active Problems

~

Subjective

Complaint.  
Keeper reports that this patient was oiled a few days and noticed that she was scratching on her ear and tail.  
Opened a new small section on her ear margin, new scab on tail and there is some microabscesses developing to the tip of tail. Requests examination.  
To also recheck the left front nail defect.

Objective

The right pinna margin - the purple skin lesion noted below the old injury is still present. Bright red to slight purple in colorationThe top layer of skin is missing now. It is approximately 1.5 cm in size and shallow. Not bleeding at all. The upper margin is 9 cm long by 4 cm wide now. The medial aspect of the ear margin has become opened again and wider. Approximately 1 mm in depth and clear line of new and old granulation tissue present.  
Left front digit 2 nail defect on the lateral aspect of the nail has a white soft 4 by 1 cm long section of skin that is now white in coloration. Can see in the center area there is bubble like appearance that has some grey colored material underneath.  
Tail - there are two small superficial microabscesses to the distal 1/3rd of the tail tip that were easily scrubbed open with chlorhexidine solution. About 3 to 4 mm in size. Both contained a small amount of white purulent debris. In the middle 1/3rd of the tail tip there is a large yellow scab present next to the old tail scab and moderately mobile. Approximately 4 cm by 2 cm adjacent to the old scab that is now very raised, circular with a central indentation. Approximately 2.5 cm in size. This scab is hard and immobile. Left hip lesion - no change.

Assessment

Appears to have been a small bruise from a pinching action that is now missing the top skin layer from rubbing it.  
Nail defect - suspect this to open on its own in the next day or two.  
Scab on tail - new adjacent to old; microabscessed from mineral oil application.

Plan

Advised keepers to continue monitoring the front nail defect and continue with daily foot soakings for now until it opens on its own so it is not painful.  
Advised keepers to scrub the tail defect with diluted chlorhexidine once daily. Performed today. Applied a thin layer of mupiricin and then large amount of vitamin A/D ointment to the lesion and the surrounding skin to help soften the scab. Wrapped lightly with vetwrap to help hold the moisture to the area. Hopefully will loosen so that can apply topical mupiricin ointment directly into the wound and then thin amount of vitamin A/D ointment to the skin.  
Microabscesses scrubbed with diluted chlorhexidine and thin smear of mupiricin ointmet applied topically.  
To monitor closely over the next few days.  
May want to consider using a different moisturizing agent to the right pinna and tail to prevent patient from being itchy.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jan 27, 2021

Clinical note

Date

Jan 27, 2021

Time

00:00

Note

Erica Lipanovich

Author

Significant

No

Private

No

Active Problems

~

Subjective

Recheck.  
Today is the last day of mupiricin topical antibiotic ointment.  
Keepers have noted an improvement.  
Also noted some nail defects yesterday during footwork - evaluated.

Objective

The right front foot has a nail defect present a the base of the second nail where there was some necrotic material that was removed. Approximately 5 cm by 2.5 cm in size and 1 cm in depth.  
The left front foot has a nail defect on the lateral aspect of the second nail that was pared out to reveal further necrotic debris underneath the lateral aspect of the nail. Have been soaking for a few days and has improved some already.  
The left hip lesion is now flush with the skin completely and approximately 2.5 by 1.75 cm in size. The underlying tissue is a bright red coloration. The cranial hip lesion has healed completely.

Assessment

New nail defects  
left hip lesions - healing well.

Plan

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Advised keepers that plan to continue the mupiricin ointment as directed as well as the vitamin A/D ointment.  
Keepers are to continue foot soakings and to monitor.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Prescription/Treatment

Basic Info

Date Written

Jan 27, 2021

Start Date

Jan 27, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jan 27, 2021

Measurement Value

2,740 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Treatment Detail

Treatment Item/Drug

Mupirocin 2% (20 mg/g Semisolid > Ointment) (Mupirocin)

Dose Amount

1 piece

Dosage Amount

0.000 mg/kg

Administrated Dose Quantity

1 count

Frequency

once a day (sid)

Duration

14days

Delivery Route

Topical

Loading Dose

~

Form of Drug

Ointment

Concentration Of Drug

20 mg/g

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

After cleaning gently with diluted chlorhexidine solution, apply thin coat of mupirocin and then liberally apply Vitamin A/D ointment to the entire area once daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

Date	Title	Assigned To	Done
Feb 09, 2021	5 / Asian elephant / MIG12-29545888 Mupirocin 2% treatment is complete	Erica Lipanovich	No

Dispensing Records

Date Dispensed	Dispensed By	Quantity Dispensed
~	~	~

Administration Records

Administration Date/Time	Administered By	Success	Notes
Feb 09, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 08, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 07, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 06, 2021 00:00	Michael Weaver	Complete	~
Feb 05, 2021 00:00	Michael Weaver	Complete	~
Feb 04, 2021 00:00	Michael Weaver	Complete	~
Feb 03, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 02, 2021 00:00	Karen Veary-Santos	Complete	~
Feb 01, 2021 00:00	Karen Veary-Santos	Complete	~
Jan 31, 2021 00:00	Karen Veary-Santos	Complete	~
Jan 30, 2021 00:00	Michael Weaver	Complete	~
Jan 29, 2021 00:00	Michael Weaver	Complete	~
Jan 28, 2021 00:00	Michael Weaver	Complete	~
Jan 27, 2021 00:00	Michael Weaver	Complete	~

Jan 24, 2021

Clinical note

Date

Jan 24, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

~

Subjective

Update.  
Keeper reports that there was normal fecal bolus piles but that there was one pile that was spread out, slightly smaller boluses of normal consistency.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Behaviorally she is completely normal and drinking and eating normally.  
Given additional mineral oil with bran and gatorade at the end of the day when it was found after noon.  
To continue to monitor.  
Keeper also noted that there was a small bruise present under the skin along the right pinna, directly below where there is new skin growth along the lateral margin.  
Approximately 3 mm in size. To monitor.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Jan 20, 2021

Clinical note

Date	Time	Note Author
Jan 20, 2021	00:00	Lisa Bonanni
Significant	Private	Active Problems
No	No	~

Note Subtype: General

Notes/Comments

Trunk wash #3 collected.  
Instilled 60 ml into each nare of sterile saline. Had elephant forcibly exhale into a clean plastic bag and then placed content into a sterile container.  
Frozen in prep for shipment to NVSL.

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Clinical note

Date	Time	Note Author
Jan 20, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	~

Subjective

Update.  
Keeper reports that this elephant appears to be normal this morning.  
Ate all of hay offered overnight.  
Interested in food and participation in training this morning. Had several piles of normal fecal boluses with one being larger then the rest (not abnormal for this animal). They are all formed and normal shape.  
Also urinated overnight as well.

Objective

MM are pink and CRT <2.  
No evidence of bloat and appears calm and relaxed.

Assessment

colic has resolved.

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Plan

Discussed with staff that due to age, appears she can not process the pine browse adequately and therefore will have to be removed from her enrichment.  
To continue to monitor.  
Recommend continuing gatorade and mineral oil just for today and return to normal water and diet tomorrow.  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail	
Collection Date/Time	Jan 20, 2021 00:00
Sample Type	Other fluid, secretion or exudate
Anatomical Source/Tissue	~
Additives/Preservatives	~
Collection Method	~
Collected By	Lisa Bonanni
Reason	~
Exclude from reference intervals	No

Sample Quality	
Color	~
Color Intensity	~
Clarity	~
Consistency	~
Degraded	No

Initial Holding Conditions	
Initial Holding Temp.	~
Initial Holding Duration	~

Sample History			
Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 20, 2021	~/~	Available	NVSL AMES/1/1

Notes	
~	

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail	
Date Requested	Jan 20, 2021
Requested By	Erica Lipanovich
Laboratory	NVSL AMES
Analysis Start Date	~
Analysis Equipment	~
Insufficient Sample	No

Sample Quality	
Color	~
Color Intensity	~
Clarity	~
Consistency	~
Additional Characteristics	~
Degraded	No

Notes/Comments	
trunk wash	

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Requests & Test Results

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Mycobacterium cultur	No clinically significant microorganism was isolated		~	~	~	~

Sample Detail (GSN: S-PGW21-005522)

Collection Date/Time	Jan 20, 2021 00:00	Collection Method	~
Sample Type	Other fluid, secretion or exudate	Collected By	Lisa Bonanni
Anatomical Source/Tissue	~	Reason	~
Additives/Preservatives	~	Exclude from reference intervals	No

Jan 19, 2021

Clinical note

Date	Time	Note Author
Jan 19, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	~

Subjective

Complaint.

Keeper reports that midmorning this elephant was acting off - increased activity, pacing, turning and spinning around quickly. Ate her grain this morning and seemed to be fine but then didn't want her hay. Asked to go outside and did same behaviors. Not interested in drinking this morning and not interested in hay. Did take bran with mineral oil well and gatoraide. Has been getting pine bough browse every other day and did get some yesterday.

Objective

MM - more pale then this morning. CRT < 2 sec.

Increased borborygmus on the upper right side and decreased in the other three quadrants.

BAR. Abdomen would become tense intermittently. Still participating in training.

Assessment

mild to moderate colic

Plan

MM coloration seemed to improve some while examining.

Opportunisticly collected blood from the medial saphenous for inhouse testing

Monitored borborygmus multiple times during the day.

1:30pm. Enteric pathogen culture collected from a fecal bolus that was passed - normal in appearance and consistency. Did have mild tenesmus to get it to pass but short length of time. Urinated as well - all normal coloration and texture. Ate some hay and drank gatorade with mineral oil (96 oz with 32 oz mineral oil).

2:15pm - Observed some open mouth/yawning behavior and keeper heard some chewing while drinking gatorade earlier in the day with gatoraide. No bloat present. Gas sounds increased on the left upper quadrant and were still diminished in the other quadrants at each recheck. Gum color was pale but CRT was <2 sec.

3:30pm - Finally drank from the hose for about 1 minutes. Eating hay, given produce coated in mineral oil and more bran.

To monitor fecal output and recheck in morning.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Clinical note

Date	Time	Note Author
Jan 19, 2021	00:00	Erica Lipanovich
Significant	Private	Active Problems
No	No	~

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Subjective

Trunk wash #2 collected.  
Instilled 60 ml into each nare of sterile saline. Had elephant forcibly exhale into a clean plastic bag and then placed content into a sterile container.  
Frozen in prep for shipment to NVSL.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail	
Collection Date/Time	Jan 19, 2021 00:00
Sample Type	Whole Blood
Anatomical Source/Tissue	Left saphenous vein
Additives/Preservatives	EDTA
Collection Method	Phlebotomy
Collected By	Erica Lipanovich
Reason	~
Exclude from reference intervals	No

Sample Quality	
Additional Characteristics	~
Degraded	No

Pre-Sampling Conditions	
Fasting Duration	< 2 hours
Restraint Type	Behavioral
Activity	Moderate activity

Initial Holding Conditions	
Initial Holding Temp.	~
Initial Holding Duration	~

Sample History			
Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	NEW BEDFO/27/27
Jan 19, 2021	~/~	Available	UMAWLAB/22/0

Notes	
~	

Calendar Items			
Date	Title	Assigned To	Done
~	~	~	~

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Moderate activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	UMAWLAB/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Other fluid, secretion or exudate

Anatomical Source/Tissue

Nares

Additives/Preservatives

~

Collection Method

Other

Collected By

Erica Lipanovich

Reason

Preventative Health

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	NVSL AMES/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Collection Method

~

Collected By

From Medarks

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

undetermined

Restraint Type

Physical

Activity

Undetermined

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	SCBI Lab/1/1

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Sample Detail

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Feces

Additives/Preservatives

Transport media

Collection Method

Swab

Collected By

Karen Veary-Santos

Reason

Medical

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	IDEXXUSA/2/2

Notes

~

Calendar Items

Date	Title	Assigned To	Done
~	~	~	~

Sample

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

Left saphenous vein

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Additional Characteristics

~

Degraded

No

Pre-Sampling Conditions

Fasting Duration

< 2 hours

Restraint Type

Behavioral

Activity

Moderate activity

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Date	Sample ID / Sample GSN	Status	Laboratory / Test Order / Test Results
Jan 19, 2021	~/~	Available	NEW BEDFO/14/14
Jan 19, 2021	~/~	Available	~/~/~
Jan 19, 2021	~/~	Available	UMAWLAB/3/1
Jan 19, 2021	~/~	Available	IDEXXUSA/1/1
Jan 19, 2021	~/~	Available	SCBI Lab/1/1
Jan 19, 2021	~/~	Available	MSU VDL/5/5

Notes

~

Date	Title	Assigned To	Done
~	~	~	~

Test & Result

Test Request Detail

Date Requested

Jan 19, 2021

Requested By

Erica Lipanovich

Laboratory

UMAWLAB

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

~

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Fibrinogen [a]	400 mg/dL	Insufficient data	~	No	~	No

Sample Detail (GSN: S-PGW21-005342)

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Plasma

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

Lisa Bonanni

Reason

~

Exclude from reference intervals

No

Test & Result

Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail

Date Requested

Requested By

Laboratory

Analysis Start Date

Analysis Equipment

Insufficient Sample

Jan 19, 2021

Erica Lipanovich

SCBI Lab

~

~

No

Sample Quality

Color

Color Intensity

Clarity

Consistency

Additional Characteristics

Degraded

~

~

~

~

~

No

Notes/Comments

Serum P4

0.78 pg/well

Test Requests & Test Results

~

Test	Primary Result	Expected Results (Based on Best Available Match) Type: Min- Max   Mean [Median] N (Animals)	Evaluation	Excl'd. from RI	Clinical Finding	Reviewed
Progest.	0.02 ng/mL	Not calculated	~	~	~	No

Sample Detail (GSN: S-PGW21-005336-S05)

Collection Date/Time

Sample Type

Anatomical Source/Tissue

Additives/Preservatives

Jan 19, 2021 00:00

Serum

Left saphenous vein

~

Collection Method

Collected By

Reason

Exclude from reference intervals

Phlebotomy

Erica Lipanovich

~

No

Test & Result

Test Request Detail

Date Requested

Requested By

Laboratory

Analysis Start Date

Analysis Equipment

Insufficient Sample

Jan 19, 2021

Erica Lipanovich

UMAWLAB

~

~

No

Sample Quality

Color

Color Intensity

Clarity

Consistency

Additional Characteristics

Degraded

~

~

~

~

~

No

Notes/Comments

~



Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Test Request Detail

Date Requested

Jan 19, 2021

Requested By

Erica Lipanovich

Analysis Start Date & Time

~

Analysis By

Lisa Bonanni

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

rouleaux- mod  
Total protien= 8.6 mg/dl



Animal Type	GAN	Preferred ID	Taxonomy	Sex	Birth Date
Individual	MIG12-29545888	5	Elephas maximus/Asian elephant	Female	Oct 29, 1958

Sample Detail (GSN: S-PGW21-005335)

Collection Date/Time	Jan 19, 2021 00:00	Collection Method	Phlebotomy
Sample Type	Whole Blood	Collected By	Erica Lipanovich
Anatomical Source/Tissue	Left saphenous vein	Reason	~
Additives/Preservatives	EDTA	Exclude from reference intervals	No

Test & Result

Test Request Detail

Date Requested	Jan 19, 2021
Requested By	Erica Lipanovich
Laboratory	MSU VDL
Analysis Start Date	~
Analysis Equipment	~
Insufficient Sample	No

Sample Quality

Color	~
Color Intensity	~
Clarity	~
Consistency	~
Additional Characteristics	~
Degraded	No

Notes/Comments

Vit E, Serum Interpretation  
In most domestic species, including horses, adequate serum vitamin E concentrations are considered to range 2.0 - 4.0 ug/mL. Between 2010 and 2020 we've tested 2381 elephant serum samples for vitamin E. One hundred forty-six of these samples had vitamin E concentrations below detection limits, some of those being due to small sample size which reduces the sensitivity of our analysis. For the remaining 2235 samples:  
Range of values: 0.05 - 8.65 ug/mL  
Middle 90%: 0.17 - 1.92 ug/mL  
1/19/2021 2:45:00 PM Vitamin E, Serum (UPLC):  
Serum vitamin E concentration is a good indicator for vitamin E status. The animal requirement for vitamin E is not absolute, but varies on such things as the fatty acid profile of the diet and oxidative stress placed on the animal. Therefore, it is impossible to state what deficient, or adequate, vitamin E nutriture is for all situations.

Test Requests & Test Results

~~~~~

| Test               | Primary Result | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median]<br>N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
|--------------------|----------------|---|------------|-----------------|------------------|----------|
| Vit. E UPLC        | 2.51 µg/ml     | Global sp RI: 0.15 - 3.75   1.64 [1.43] N=49 (32)   | ~          | No              | ~                | No       |
| Selenium ICPMS     | 359 ng/mL      | Global sp RI: 96 - 184   146 [148] N=43 (25)  | High       | No              | ~                | No       |
| 25(OH) Vit. D3 RIA | 39 nmol/L      | Global sp RI: 10 - 106   45 [40] N=46 (21)  | ~          | No              | ~                | No       |
| PTH RIA            | 140 pmol/L     | Insufficient data   | ~          | No              | ~                | No       |
| ion Ca++           | 1.38 mmol/L    | Global sp RI: 0.25 - 1.72   0.66 [0.35] N=99 (29)   | ~          | No              | No               | No       |

Sample Detail (GSN: S-PGW21-005336-S02)

|                          |                     |                                  |                  |
|--------------------------|---------------------|----------------------------------|------------------|
| Collection Date/Time     | Jan 19, 2021 00:00  | Collection Method                | Phlebotomy       |
| Sample Type              | Serum               | Collected By                     | Erica Lipanovich |
| Anatomical Source/Tissue | Left saphenous vein | Reason                           | ~                |
| Additives/Preservatives  | ~                   | Exclude from reference intervals | No               |

Test & Result

Test Request Detail

|                            |                  |
|----------------------------|------------------|
| Date Requested             | Jan 19, 2021     |
| Requested By               | Erica Lipanovich |
| Analysis Start Date & Time | ~                |
| Analysis By                | Lisa Bonanni     |
| Analysis Equipment         | ~                |
| Insufficient Sample        | No               |

Sample Quality

|                            |    |
|----------------------------|----|
| Color                      | ~  |
| Color Intensity            | ~  |
| Clarity                    | ~  |
| Consistency                | ~  |
| Additional Characteristics | ~  |
| Degraded                   | No |

Notes/Comments

no hem/lip/ict



| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

| Test Requests & Test Results |                |   |            |                 |                  |          |
|------------------------------|----------------|---|------------|-----------------|------------------|----------|
| Test                         | Primary Result | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median]<br>N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
| C-React. Prot.               | ~ mg/L         | Basic Stats: ~ - ~   3 [3] N=15 (7)   | ~          | No              | ~                | ~        |
| Serum Amyloid A              | <0.1 mg/L      | Global sp RI: 0.2 - 214.9   29.9 [5.1] N=105 (28)   | ~          | No              | ~                | No       |
| Haptoglobin                  | ~ mg/ml        | Global sp RI: 0.14 - 4.00   1.30 [1.04] N=206 (27)  | ~          | No              | ~                | ~        |

|   |                     |                                  |                  |
|---|---------------------|----------------------------------|------------------|
| Sample Detail (GSN: S-PGW21-005336-S01) |                     |                                  |                  |
| Collection Date/Time                    | Jan 19, 2021 00:00  | Collection Method                | Phlebotomy       |
| Sample Type                             | Serum               | Collected By                     | Erica Lipanovich |
| Anatomical Source/Tissue                | Left saphenous vein | Reason                           | ~                |
| Additives/Preservatives                 | ~                   | Exclude from reference intervals | No               |

Test & Result

|                     |                  |                            |    |
|---------------------|------------------|----------------------------|----|
| Test Request Detail |                  | Sample Quality             |    |
| Date Requested      | Jan 19, 2021     | Color                      | ~  |
| Requested By        | Erica Lipanovich | Color Intensity            | ~  |
| Laboratory          | IDEXXUSA         | Clarity                    | ~  |
| Analysis Start Date | ~                | Consistency                | ~  |
| Analysis Equipment  | ~                | Additional Characteristics | ~  |
| Insufficient Sample | No               | Degraded                   | No |

|   |  |
|---|--|
| Notes/Comments  |  |
| Source: FECAL<br>Status : FINAL<br>Culture Results:<br>Organism 1 : Serratia liquefaciens - Few<br>Organism 2 : E. coli - 2+<br>No Salmonella, Shigella, Plesiomonas, Edwardsiella, Aeromonas or Yersinia isolated.<br>No Campylobacter isolated. |  |

| Test Requests & Test Results |   |   |            |                 |                  |          |
|------------------------------|---|---|------------|-----------------|------------------|----------|
| Test                         | Primary Result                            | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median]<br>N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
| Enteric Path. Cult.          | Taxon Result - Serratia / Serratia        |   | ~          | ~               | ~                | No       |
| Secondary Result             | scant growth                              |   |            |                 |                  |          |
| Enteric Path. Cult.          | Taxon Result - Escherichia coli / E. coli |   | ~          | ~               | ~                | No       |
| Secondary Result             | light growth                              |   |            |                 |                  |          |

|                                     |                    |                                  |                    |
|-------------------------------------|--------------------|----------------------------------|--------------------|
| Sample Detail (GSN: S-PGW21-005339) |                    |                                  |                    |
| Collection Date/Time                | Jan 19, 2021 00:00 | Collection Method                | Swab               |
| Sample Type                         | Feces              | Collected By                     | Karen Veary-Santos |
| Anatomical Source/Tissue            | ~                  | Reason                           | Medical            |
| Additives/Preservatives             | Transport media    | Exclude from reference intervals | No                 |

Test & Result

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

Test Request Detail

Date Requested

Jan 19, 2021

Requested By

Erica Lipanovich

Laboratory

IDEXXUSA

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

TEST INTERPRETATION:  
Reporting units for rabies RFFIT are IU/mL format, following recommendations from the current Advisory Committee on Immunization Practices (ACIP). A serum concentration of 0.5 IU/mL is acceptable for export to most rabies-free areas, but local regulations may determine if a booster vaccination is needed.  
Referral test performed at the Rabies Laboratory Kansas State University.

Test Requests & Test Results

| Test           | Primary Result | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median]<br>N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
|----------------|----------------|---|------------|-----------------|------------------|----------|
| Rabies Ab FAVN | 13.10 U/mL     | Not calculated  | ~          | ~               | ~                | No       |

Sample Detail (GSN: S-PGW21-005336-S03)

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

Left saphenous vein

Additives/Preservatives

~

Collection Method

Phlebotomy

Collected By

Erica Lipanovich

Reason

~

Exclude from reference intervals

No

Test & Result

Test Request Detail

Date Requested

Jan 19, 2021

Requested By

Erica Lipanovich

Laboratory

NVSL AMES

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

trunk wash

Test Requests & Test Results

| Test                 | Primary Result                                       | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median]<br>N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
|----------------------|--|---|------------|-----------------|------------------|----------|
| Mycobacterium cultur | No clinically significant microorganism was isolated |   | ~          | ~               | ~                | ~        |

Sample Detail (GSN: S-PGW21-005334)

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Other fluid, secretion or exudate

Anatomical Source/Tissue

Nares

Additives/Preservatives

~

Collection Method

Other

Collected By

Erica Lipanovich

Reason

Preventative Health

Exclude from reference intervals

No

Test & Result

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

Test Request Detail

Date Requested

Jan 19, 2021

Requested By

From Medarks

Laboratory

SCBI Lab

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

Serum P4 (pg/well)0.78

Test Requests & Test Results

~

| Test     | Primary Result | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean [Median] N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
|----------|----------------|--|------------|-----------------|------------------|----------|
| Progest. | 0.02 ng/mL     | Not calculated   | ~          | ~               | ~                | No       |

Sample Detail (GSN: S-PGW21-005632)

Collection Date/Time

Jan 19, 2021 00:00

Sample Type

Serum

Anatomical Source/Tissue

~

Additives/Preservatives

~

Collection Method

~

Collected By

From Medarks

Reason

~

Exclude from reference intervals

No

Jan 18, 2021

Clinical note

Date

Jan 18, 2021

Time

00:00

Note Author

Erica Lipanovich

Significant

No

Private

No

Active Problems

~

Subjective

Trunk wash #1 collected.  
Instilled 60 ml into each nare of sterile saline. Had elephant forcibly exhale into a clean plastic bag and then placed content into a sterile container.  
Frozen in prep for shipment to NVSL.  
E Lipanovich, DVM

Objective

~

Assessment

~

Plan

~

Animal Care Staff Medical Summary

~

Calendar Items

| Date | Title | Assigned To | Done |
|------|-------|-------------|------|
| ~    | ~     | ~           | ~    |

Sample

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

Sample Detail

Collection Date/Time

Jan 18, 2021 07:15

Sample Type

Other fluid, secretion or exudate

Anatomical Source/Tissue

Nares

Additives/Preservatives

~

Collection Method

Other

Collected By

Erica Lipanovich

Reason

Preventative Health

Exclude from reference intervals

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Degraded

No

Initial Holding Conditions

Initial Holding Temp.

~

Initial Holding Duration

~

Sample History

| Date         | Sample ID / Sample GSN | Status    | Laboratory / Test Order / Test Results |
|--------------|------------------------|-----------|--|
| Jan 18, 2021 | ~/~                    | Available | NVSL AMES/1/1                          |

Notes

~

Calendar Items

| Date | Title | Assigned To | Done |
|------|-------|-------------|------|
| ~    | ~     | ~           | ~    |

Test & Result

Test Request Detail

Date Requested

Jan 18, 2021

Requested By

Erica Lipanovich

Laboratory

NVSL AMES

Analysis Start Date

~

Analysis Equipment

~

Insufficient Sample

No

Sample Quality

Color

~

Color Intensity

~

Clarity

~

Consistency

~

Additional Characteristics

~

Degraded

No

Notes/Comments

trunk wash

Test Requests & Test Results

~

| Test                 | Primary Result                                       | Expected Results (Based on Best Available Match)<br>Type: Min- Max   Mean<br>[Median] N (Animals) | Evaluation | Excl'd. from RI | Clinical Finding | Reviewed |
|----------------------|--|---|------------|-----------------|------------------|----------|
| Mycobacterium cultur | No clinically significant microorganism was isolated |   | ~          | ~               | ~                | ~        |

Sample Detail (GSN: S-PGW21-005326)

Collection Date/Time

Jan 18, 2021 07:15

Sample Type

Other fluid, secretion or exudate

Anatomical Source/Tissue

Nares

Additives/Preservatives

~

Collection Method

Other

Collected By

Erica Lipanovich

Reason

Preventative Health

Exclude from reference intervals

No

Jan 17, 2021

Clinical note

| Date         | Time  | Note Author      |
|--------------|-------|------------------|
| Jan 17, 2021 | 00:00 | Erica Lipanovich |

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

SignificantPrivateActive Problems

NoNo~

Subjective

Visual recheck of the left hip lesion.

Objective

Observed outside - the hip lesion has increased in size by another 1-2 cm however is not at deep, much more superficial. Still pink in coloration. No erythema noted.

Assessment

slight improvement

Plan

To continue to monitor and continue with topical mupricin ointment  
E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

| Date | Title | Assigned To | Done |
|------|-------|-------------|------|
| ~    | ~     | ~           | ~    |

Jan 13, 2021

Clinical note

DateTimeNote Author

Jan 13, 202100:00Erica Lipanovich

SignificantPrivateActive Problems

NoNo~

Subjective

Yearly physical exam and review of husbandry and diet. Keepers report normal behavior, appetite, and urinations. Over the last year she has had intermittent episodes of very mild colic with large fecal boluses intermixed with normal size/shape fecal boluses. She usually passes normal stools throughout the day and then one larger than normal size bolus without issue. Past history includes fungal corneal stroma abscess OD, colic, trunk paresis, tail tip amputation, severe vasculitis to the right caudal pinna and osteoarthritis. Historical pressure sores on hips resolved years ago. She has broken her left tush high within the sulcus.

Current concerns include age-related osteoarthritis, continued closure of the right pinna, left hip has two small pressure sores (new) and foot care. Current treatments includes twice daily Ibuprofen, foot soaks, three times weekly bran, daily beet pulp (2 pounds), Vitamin E (20 ml) and Arthroxygen joint supplement (3 scoops twice daily). She is currently getting daily flushing of the left sulcus once daily with warm water only. There has been no odor or discharge noted since March. This has remained nonpainful, no discharge and noninfected to date. The zygomatic pressure sores are also getting daily gentle scrubbings with diluted chlorhexidine solution, patted dry and thin application of vitamin A/D ointment. The right pinna margin is cleaned once to twice daily gently with diluted chlorhexidine solution, patted dry and thin application of vitamin A/D ointment. Current diet includes local chopped hay (about 40 pounds of hay during the day and about 35 pounds during the evening), alfalfa cubes (5 pounds overnight), Mazuri elephant supplement (soaked - 6 pounds in PM), Purina Equine Senior (6 pounds in AM), browse, produce (about 10 pounds a day) plus additional enrichment produce throughout the day.

Objective

BAR, BCS - 5/9. Behaviorally engaged throughout session and responds to verbal and tactile stimulation.

EENT:

Corneas: The left eye has a central corneal scar of 4 by 3 mm that has remained the same with no lenticular opacities bilaterally. Both eyes have a normal small amount of clear serous ocular discharge. Pupillary light response is present in both eyes.

Nares: no nasal discharge; partial trunk paralysis is still present (no change)

Oral: MM moist and pink. Well hydrated. No signs of erythema. Teeth not visualized today. Can palpate a small tip of the tush on the right side. Unable to palpate or visualize the left tush as elephant keeps the margin closed. Nonpainful and no swelling noted to the external palpation of the tushes bilaterally.

Ears: Left ear contain a small to moderate amount of dried brown debris within the ear canal. Unable to visualize the tympanic membranes easily.

Integ: Skin is in good condition. There is hyperkeratinization present around both temporal regions and caudal thighs. The current measurements are 7 cm (length) by 1.5 cm (at the widest). There is a large amount of healthy, pink, intact skin at the ventral pinna margin where it has closed over the last 2 years. Temporal glands are small with no drainage or discharge noted. Nonpainful on palpation. Left zygomatic skin ulceration is approximately 1 cm in size and 2-3 mm in depth. The cranial zygomatic ulceration is approximately 1 cm, round and approximately superficial. Nonpainful to touch with no erythema. The right zygomatic has two skin ulcerations - the cranial round lesion is 8 mm in size with a healthy scab. The caudal lesion is 4 mm and superficial. Nonpainful to touch with no erythema present. The right and left mammary glands palpate soft with no masses or consistency abnormalities. The nipples are normal on palpation. The tail has a two scabs present - the proximal scab is approximately 1 cm, firmly attached. There is an area of darker pigmentation surrounding and traversing distally about 4 cm. Nonpainful to the touch. The second distal scab is 4 mm in size and appears to have a scab with a small piece of skin still attached (a few days old). Shallow. The left lateral hip has two new lesions: the cranial lesion is very superficial and 4 mm in size. Mild erythema and slightly moist. The caudal lesion is 2 by 2.5 cm in size and 4 mm in depth. The skin margins are sharp with mild erythema and can see subcutaneous tissue. Caked with sand and had

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

to be rinsed and scrubbed clean for visual.

Feet: Cuticles are clean. Pads are clean on all four feet. All nails are up above the pads and trimmed even. Pigeon toed appearance to the front feet (old). Both front feet conformationally are rotated medial slightly.

RF - Normal nails at this time. There is moderate excess pad present along the slipper. There are no defects or softness palpated. The medial 1/3rd of the slipper is worn smooth.

LF - Normal nails at this time. There is moderate excess pad present along the slipper. There are no defects or softness palpated. The slipper is worn smooth along the medial 1/4th of the foot.

RR - Normal nails at this time. There is moderate excess pad present along the slipper. There are no defects or softness palpated.

LR - Normal nails at this time as the previous nail defect is growing out normally. There is moderate excess pad present along the slipper. There are no defects or softness palpated.

M/S: There is a decrease in musculature to the temporal region bilaterally (age related changes). Locomotion shows a decreased ROM of the front left elbow joint and both carpi. Has had intermittent periods of ambulating with a lowering of the right rear at what appears to be the knee and hip. There was increase crepitation during ambulation noted from the front joints. There is good ROM in the other joints.

CV/R: HR - 42 bpm, no murmurs or arrhythmias auscultated. RR - 20 bpm, lung sounds are unappreciable at this time, no sounds associated with wheezing or crackles heard.

GI: Normal borborygmus on the right side but decreased on the left side.

Bolus temperature was 96.6F

Urogenital: Vulva is clean and dry with pink, normal mucosa within the tract.

Assessment

geriatric elephant  
chronic osteoarthritis  
right pinna - slowly healing  
pressure sores (new) left hip

Plan

Request blood collection for titers rather than vaccination for rabies and tetanus, vitamin panel testing, CBC, biochemistry and hormones.

RX: mupirocin ointment - apply thin amount to the left hip lesions once daily after cleaned with dilute chlorhexidine solution. Apply liberal coating of vitamin A/D ointment to the left hip to keep skin soft and supply rather than dry out as she is laying more on her left side then the right recently.

Radiographs to be performed next month when new radiography unit is installed.

No changes to current treatment.

Rectal examination with reproductive ultrasound to be performed later once has been desensitized again.

E Lipanovich, DVM

Animal Care Staff Medical Summary

~

Calendar Items

| Date | Title | Assigned To | Done |
|------|-------|-------------|------|
| ~    | ~     | ~           | ~    |

Prescription/Treatment

Basic Info

**Date Written** Jan 13, 2021  
**Start Date** Jan 13, 2021 00:00  
**Prescribed By** Erica Lipanovich  
**Prescribed For** 1 animal  
**Reason For Treatment** Medical

Weight Info

**Date** Jan 13, 2021  
**Measurement Value** 2,740 kg  
**Estimate** Yes  
**Exclude From Reference Intervals** Yes

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

Treatment Detail

Treatment Item/Drug

Mupirocin 2% (20 mg/g Semisolid > Ointment) (Mupirocin)

Dose Amount

1 piece

Frequency

once a day (sid)

Form of Drug

Ointment

Dosage Amount

0.000 mg/kg

Duration

14days

Concentration Of Drug

20 mg/g

Administrated Dose Quantity

1 count

Delivery Route

Topical

Loading Dose

~

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

After cleaning gently with diluted chlorhexidine solution, apply thin coat of mupirocin and then liberally apply Vitamin A/D ointment to the entire area once daily for 14 days.

Prescription Notes/Comments

~

Calendar Items

| Date         | Title  | Assigned To      | Done |
|--------------|--|------------------|------|
| Jan 26, 2021 | 5 / Asian elephant / MIG12-29545888 Mupirocin 2% treatment is complete | Erica Lipanovich | No   |

Dispensing Records

| Date Dispensed | Dispensed By | Quantity Dispensed |
|----------------|--------------|--------------------|
| ~              | ~            | ~                  |

Administration Records

| Administration Date/Time | Administered By    | Success  | Notes                        |
|--------------------------|--------------------|----------|------------------------------|
| Jan 26, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 25, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 24, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 23, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 22, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 21, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 20, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 19, 2021 00:00       | Karen Veary-Santos | None     | Would not come for treatment |
| Jan 18, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 17, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |
| Jan 16, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 15, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 14, 2021 00:00       | Michael Weaver     | Complete | ~                            |
| Jan 13, 2021 00:00       | Karen Veary-Santos | Complete | ~                            |

Jan 07, 2021

Prescription/Treatment

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

Basic Info

Date Written

Jan 07, 2021

Start Date

Jan 07, 2021 00:00

Prescribed By

Erica Lipanovich

Prescribed For

1 animal

Reason For Treatment

Medical

Weight Info

Date

Jan 07, 2021

Measurement Value

2,796 kg

Estimate

Yes

Exclude From Reference Intervals

Yes

Treatment Detail

Treatment Item/Drug

Ibuprofen (800 mg Solid > Tablet) (Ibuprofen)

Dose Amount

17,160 mg

Dosage Amount

6.137 mg/kg

Administrated Dose Quantity

21.45 count

Frequency

twice a day (bid)

Duration

30days

Delivery Route

Oral (p.o.)

Loading Dose

~

Form of Drug

Tablet

Concentration Of Drug

800 mg

Treatment Response

Clinical Response

~

Adverse Effects

~

Adverse Effects Note:

~

Staff Instructions

Give 21.5 tablets orally twice daily for 30 days.

Prescription Notes/Comments

~

Calendar Items

| Date         | Title   | Assigned To      | Done |
|--------------|---|------------------|------|
| Feb 06, 2021 | 5 / Asian elephant / MIG12-29545888 Ibuprofen treatment is complete | Erica Lipanovich | No   |

Dispensing Records

| Date Dispensed | Dispensed By | Quantity Dispensed |
|----------------|--------------|--------------------|
| ~              | ~            | ~                  |

Administration Records

| Administration Date/Time | Administered By    | Success  | Notes |
|--------------------------|--------------------|----------|-------|
| Feb 07, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 07, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 06, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 06, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 05, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 05, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 04, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 04, 2021 00:00       | Michael Weaver     | Complete | ~     |
| Feb 03, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 03, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 02, 2021 00:00       | Kathryn Harding    | Complete | ~     |
| Feb 02, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 01, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Feb 01, 2021 00:00       | Karen Veary-Santos | Complete | ~     |
| Jan 31, 2021 00:00       | Karen Veary-Santos | Complete | ~     |

| Animal Type | GAN            | Preferred ID | Taxonomy                       | Sex    | Birth Date   |
|-------------|----------------|--------------|--------------------------------|--------|--------------|
| Individual  | MIG12-29545888 | 5            | Elephas maximus/Asian elephant | Female | Oct 29, 1958 |

|                    |                    |          |   |
|--------------------|--------------------|----------|---|
| Jan 31, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 30, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 30, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 29, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 29, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 28, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 28, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 27, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 27, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 26, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 26, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 25, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 25, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 24, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 24, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 23, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 23, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 22, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 22, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 21, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 21, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 20, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 20, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 19, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 19, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 18, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 18, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 17, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 17, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 16, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 16, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 15, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 15, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 14, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 14, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 13, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 13, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 12, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 12, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 11, 2021 00:00 | Kathryn Harding    | Complete | ~ |
| Jan 11, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 10, 2021 00:00 | Kathryn Harding    | Complete | ~ |
| Jan 10, 2021 00:00 | Karen Veary-Santos | Complete | ~ |
| Jan 09, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 09, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 08, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 08, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 07, 2021 00:00 | Michael Weaver     | Complete | ~ |
| Jan 07, 2021 00:00 | Michael Weaver     | Complete | ~ |

## **EXHIBIT H**

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

|                      |   |                  |
|----------------------|---|------------------|
| JOYCE ROWLEY,        | ) |                  |
|                      | ) |                  |
| Plaintiff,           | ) |                  |
|                      | ) |                  |
| v.                   | ) | CIVIL ACTION     |
|                      | ) | NO. 17-11809-WGY |
| CITY OF NEW BEDFORD, | ) |                  |
| MASSACHUSETTS,       | ) |                  |
|                      | ) |                  |
| Defendant.           | ) |                  |

YOUNG, D.J.

September 24, 2019

**FINDINGS OF FACT, RULINGS OF LAW, AND  
ORDER FOR JUDGMENT**

**I. INTRODUCTION**

This is a case about elephants -- specifically, Asian elephants.

Asian elephants . . . usually weigh[] well under eleven thousand pounds and st[an]d about seven to nine feet tall at the shoulder, as opposed to African elephants, who could weigh as much as fifteen thousand pounds and reach thirteen feet in height. Both male and female African elephants have tusks, while only some Asian males have tusks, and none of the females do. Their body shapes differ, too: Asians are more compact; Africans lankier, with a more concave back. The Africans' ears are enormous and wide (like maps of Africa, it's said) -- the biggest mammal ears in the world -- while those of the Asian elephant are smaller and closer to square.

In fact, the African and Asian elephants are not only separate species but separate genera -- a whole other level of taxonomic rank, as distinct in genetic heritage as a cheetah is from a lion. And some say it shows in their temperaments -- the Africans active and more high-strung; the Asians more serene.

Physically, all elephants are astonishing. They are the largest animals walking on land. And their appetites are commensurate . . . . , gathering their food with those incredible trunks. Longer and heavier than a man, and much, much stronger, the trunks provide elephants with a sense of smell that may be five times more acute than that of a bloodhound. And by narrowing or widening their nostrils like musical instruments, they can modulate the sound of their voices.

They have extraordinary brains built for memory and insight, and they use them to negotiate one of the most advanced and complex societies of all mammals. To those who have spent time with them, elephants often seem philosophical and perceptive, and appear to have deep feelings. They can cooperate with one another and have been known to break tusks trying to hoist injured relatives back on their feet. Further, their behavior suggests they have an understanding of death, something believed to be rare among nonhuman animals.

Vicki Constantine Croke, Elephant Company: The Inspiring Story of an Unlikely Hero and the Animals Who Helped Him Save Lives in World War II 22-23 (Random House 2014). The Court takes judicial notice of these facts. See Fed. R. Evid. 201. Asian elephants are an endangered species. 50 C.F.R. § 17.11(h); see also 41 Fed. Reg. 24062, 24066 (June 14, 1976).

Joyce Rowley ("Rowley") sued the City of New Bedford ("City") under the Endangered Species Act, 16 U.S.C. §§ 1531-1544. Am. Compl., ECF No. 47. She alleged that the City is harming and harassing two geriatric Asian elephants, Emily and Ruth, in violation of the Endangered Species Act. See id.; 16 U.S.C. § 1540(g)(1). This Court has already determined that Rowley has standing to pursue this claim. Rowley v. City of New Bedford, 333 F. Supp. 3d 30, 39-40 (D. Mass. 2018).

## II. THE LEGAL FRAMEWORK

### A. The Endangered Species Act

Congress first enacted the Endangered Species Act, 16 U.S.C. §§ 1531-1544, in December 1973. Pub. L. No. 93-205, 87 Stat. 884 (Dec. 28, 1973). The tripartite mission of the Endangered Species Act is to (1) "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved," (2) "provide a program for the conservation of such endangered species and threatened species," and (3) take appropriate steps to carry out the United States' commitments in various international treaties and conventions regarding species conservation. 16 U.S.C. § 1531(b).

Section nine of the Endangered Species Act makes it illegal for any individual to "take" any endangered species. 16 U.S.C. § 1538(a)(1)(B). The Supreme Court has emphasized evidence that Congress intended the word "take" to cover "every conceivable way in which a person can 'take' or attempt to 'take' any fish or wildlife." Babbitt v. Sweet Home Chapter of Cmty. for a Great Or., 515 U.S. 687, 704 (1995) (quoting S. Rep. No. 93-307, at 7 (1973)). Far from prohibiting only intentional acts, section nine reaches "more than the deliberate actions of hunters and trappers." Id. at 705.

The Endangered Species Act itself defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture,

or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Here, Rowley's claims rely on the prohibition on harassing and harming endangered species. See Am. Compl. ¶¶ 95, 104-30.

The Fish and Wildlife Service, the agency within the United States Department of the Interior tasked with implementing the Endangered Species Act, see 16 U.S.C. § 1537a(a), has promulgated regulations defining the terms "harm" and "harass" in the context of the Endangered Species Act.

#### **1. Harming an Endangered Species**

The Fish and Wildlife Service defines "harm" in the definition of "take" in the Endangered Species Act to mean:

[A]n act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

50 C.F.R. § 17.3; see also Babbitt, 515 U.S. at 703

(deferring to regulation's interpretation of "harm")

(citing Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984)).

#### **2. Harassment of an Endangered Species**

The Fish and Wildlife Service defines "harass" in the definition of "take" in the Endangered Species Act to mean:

[A]n intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal

behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Id.

This definition includes a carve-out that exempts from the definition of "harass":

generally accepted: (1) [a]nimal husbandry practices that meet or exceed the minimum standards for facilities and care under the Animal Welfare Act, (2) [b]reeding procedures, or (3) [p]rovisions of veterinary care for confining, tranquilizing, or anesthetizing, when such practices, procedures, or provisions are not likely to . . . result in injury to the wildlife.

Id.

**B. The Animal Welfare Act**

Because the City is engaged in animal husbandry practices with "animals intended . . . for exhibition purposes," see 7 U.S.C. § 2131, the Animal Welfare Act exclusion applies to Rowley's harassment claims.

Before the enactment of the Endangered Species Act, Congress enacted the Animal Welfare Act, 7 U.S.C. §§ 2131-2159, Pub. L. No. 89-544, 80 Stat. 350 (Aug. 24, 1966), with the following goals:

(1) to insure that animals intended for use in research facilities or for exhibition purposes or for use as pets are provided humane care and treatment; (2) to assure the humane treatment of animals during transportation in commerce; and (3) to protect the owners of animals from the theft of their animals by preventing the sale or use of animals which have been stolen.

Id. § 2131.

Congress charged the United States Department of Agriculture ("Department of Agriculture") with enforcing this statute. Id. §§ 2132(b), 2133, 2146. To implement the Animal Welfare Act's protections, the Department of Agriculture promulgates regulations that set standards for facilities and care of animals in captivity, see, e.g., 9 C.F.R. §§ 3.125-3.142 (setting standards for the "handling, care, treatment, and transportation of warmblooded animals other than dogs, cats, rabbits, hamsters, guinea pigs, nonhuman primates, and marine mammals"), which it enforces through licensing and compliance inspections, see 7 U.S.C. § 2146(a). Unlike the Endangered Species Act, the Animal Welfare Act does not include a citizen suit provision. See Graham v. San Antonio Zoological Soc'y, 261 F. Supp. 3d 711, 737 (W.D. Tex. 2017).

There are at least four recent District Court cases that have grappled with the interplay between Animal Welfare Act requirements and the Endangered Species Act's harassment-based "take" prohibition. See Graham, 261 F. Supp. 3d at 739-43 (collecting cases).

The general consensus among these courts is that the regulations that the Department of Agriculture promulgates pursuant to the Animal Welfare Act are the substantive standards by which a court ought assess harassment-based "take" claims under the Endangered Species Act. See id. at 745. The findings

of past inspections by the Animal and Plant Health Inspection Service ("USDA-APHIS," the agency within Department of Agriculture charged with enforcing the Animal Welfare Act) are relevant to a court's assessment of whether an entity has violated the Animal Welfare Act by violating its implementing regulations but are not dispositive. See id. at 745-46.

The United States District Court for the Western District of Texas clearly described the role of USDA-APHIS assessments as follows:

APHIS determinations of past and present violations (or a lack thereof) are certainly evidence of [a harassment finding under the Endangered Species Act], but are neither necessary to support nor sufficient to warrant such a finding. Thus, the regulatory definition of "harass," by excluding animal husbandry practices that comply with the [Animal Welfare Act], does not permit a finding of no liability simply because of a previous determination of no [Animal Welfare Act] violation; instead, it substitutes the compliance standards of the [Animal Welfare Act] as the substantive standard for whether an Endangered Species Act violation has occurred, and requires such a determination to be made through the typical adversarial process.

Graham, 261 F. Supp. 3d at 745.

The court in Graham thus concluded that a claim that a zoo has violated the Endangered Species Act by "harassing" a captive endangered species requires the court to determine, first, if the zoo's practices are generally accepted, and, second, whether the zoo's practices comply with the governing Animal Welfare Act regulations. Id. at

745-46. "The burden is on the plaintiffs to show that the Animal Welfare Act's minimum standards were not met," however. Id. at 741 (citing Kuehl v. Sellner, 161 F. Supp. 3d 678, 718 (N.D. Iowa 2016); Hill v. Coggins, No. 2:13-cv-47, 2016 U.S. Dist. LEXIS 42374, at \*31-32 (W.D.N.C. Mar. 30, 2016)). The court held that it was to undertake this inquiry independently -- considering, but not simply deferring to -- any prior findings by the USDA-APHIS. Id. at 745-46.

The court in Graham further held that "whether the Zoo committed a take under the Endangered Species Act by 'harming' [a captive elephant] is a separate legal issue requiring a separate analysis of the facts, and is not at all dependent on [Animal Welfare Act] compliance." Id. at 728, 746-48 (citing Kuehl, 161 F. Supp. 3d at 715-16; Hill v. Coggins, 2016 U.S. Dist. LEXIS 42374, at \*31-32).<sup>1</sup>

In Kuehl v. Sellner, the District Court for the Northern District of Iowa found after a bench trial that the defendants, a rural family-run zoo and its owner-operators, had violated the Endangered Species Act by harassing captive lemurs and both harming and harassing

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<sup>1</sup> After the court granted summary judgment on some harassment-based "take" claims but denied it as to others, the parties in Graham settled before trial. Order, Civ. A. No. 5:15-cv-01054-XR (W.D. Tex. Dec. 5, 2017), ECF No. 78.

captive tigers. 161 F. Supp. 3d at 718. The court's determination that the defendants had harassed the lemurs and tigers was based on an evaluation of the zoo's compliance with the substantive standards in the Animal Welfare Act's implementing regulations. Id. at 710-18. While some of the conduct that the court found to constitute harassment had previously been subject to penalties by the USDA-APHIS for non-compliance, the court also found harassment in certain conduct that the USDA-APHIS had not found to violate Animal Welfare Act regulations. Id. For example, relying on the plaintiffs' expert witness, the court found that the social isolation of the lemurs disrupted their behavioral patterns and thus constituted a "take" under the Endangered Species Act (even though the USDA-APHIS had not previously sanctioned the defendants for any conduct related to the animals' social isolation). Id. at 710-11.

In Hill v. Coggins, the United States District Court for the Western District of North Carolina found after a bench trial that the plaintiffs had failed to demonstrate that the defendants, owners and operators of the Cherokee Bear Zoo, had harmed or harassed captive grizzly bears pursuant to the Endangered Species Act. 2016 U.S. Dist. LEXIS 42374, at \*37-38. In so finding, the court relied on

the fact that the plaintiffs had failed to show any evidence of instances in which the zoo's treatment of the grizzly bears had violated any Animal Welfare Act regulations governing animal treatment. Id. at \*33-34. The court failed to analyze separately whether the defendants' practices were also generally accepted animal husbandry practices, however. See id.; 50 C.F.R. § 17.3. On appeal, the Fourth Circuit corrected this error, clarifying that the exclusion in the Fish and Wildlife Service's definition of "harass" requires that the practice be both (1) "generally accepted" and (2) compliant with the Animal Welfare Act to withstand scrutiny under the Endangered Species Act. Hill v. Coggins, 867 F.3d 499, 509-10 (4th Cir. 2017).

The United States District Court for the Southern District of Florida in People for the Ethical Treatment of Animals, Inc. v. Miami Seaquarium granted summary judgment for the Seaquarium, concluding that People for the Ethical Treatment of Animals ("PETA") had introduced no evidence that the captive killer whale's living conditions "gravely threaten[ed]" her existence, and cast some doubt on the applicability of the Endangered Species Act to endangered species in captivity. 189 F. Supp. 3d 1327, 1355 (S.D.

Fla. 2016).<sup>2</sup> As the court in Graham noted, this "gravely threatening" standard exists nowhere in the Endangered Species Act or Animal Welfare Act or regulations implementing those statutes, and "was created -- without citation -- by the PETA court." Graham, 261 F. Supp. 3d at 743 (discussing Miami Seaquarium, 189 F. Supp. 3d at 1351). The Eleventh Circuit affirmed the grant of summary judgment in Miami Seaquarium, holding that -- while it may not require a grave risk of death -- "harassment" and "harm" under the Endangered Species Act require a "threat of serious harm." People for the Ethical Treatment of Animals, Inc. v. Miami Seaquarium, 879 F.3d 1142, 1144, 1147-50 (11th Cir. 2018) (per curiam).<sup>3</sup>

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<sup>2</sup> In People for the Ethical Treatment of Animals, Inc. v. Tri-State Zoological Park of W. Md., Inc., the United States District Court for the District of Maryland rejected the Miami Seaquarium court's reasoning on the potential conflict between the Endangered Species Act and the Animal Welfare Act as they pertain to endangered species in captivity. See Civ. A. No. MJG-17-2148, 2018 U.S. Dist. LEXIS 6638, at \*11-14 (D. Md. Jan. 16, 2018). The Maryland District Court noted that the Miami Seaquarium logic represented a minority view among district courts to have addressed the issue, and one that the Fourth Circuit repudiated in Hill v. Coggins, 867 F.3d at 510. Tri-State, 2018 U.S. Dist. LEXIS 6638, at \*11-14.

<sup>3</sup> The Miami Seaquarium case is less relevant than others the Court addresses here because it analyzed the living conditions of marine mammals, which the National Marine Fisheries Service regulates, instead of the Fish and Wildlife Service. See 189 F. Supp. 3d at 1333.

In responding to a challenge to the Tri-State Zoo in Maryland, the United States District Court for the District of Maryland ruled that PETA's allegations that the zoo housed lemurs, tigers, and a lion in an inappropriate social setting; failed to provide adequate enrichment to lemurs, tigers, and a lion; failed adequately to protect lemurs, tigers, and a lion from the elements; and failed to provide adequate veterinary care to a lion plausibly stated a claim for a harassment- or harm-based "take" violation of the Endangered Species Act. People for the Ethical Treatment of Animals, Inc. v. Tri-State Zoological Park of W. Md., Inc., 2018 U.S. Dist. LEXIS 6638, at \*15-18. The Maryland District Court later granted partial summary judgment to PETA, 2019 U.S. Dist. LEXIS 112366, at \*1 (D. Md. July 8, 2019), ruling that "the zoo unlawfully took Cayenne," a tiger, through a "lack of basic veterinary care," id. at \*18-19.

In sum, this Court must determine whether the City is harming or harassing Ruth and Emily pursuant to the Endangered Species Act. If any of the City's intentional or negligent conduct "creates the likelihood of injury to [the elephants] by annoying [them] to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering," that conduct constitutes

a "take" and violates the Endangered Species Act, unless the conduct is a generally accepted and Animal Welfare Act-compliant animal husbandry practice. See 50 C.F.R. § 17.3. In addition, the City has committed a "take" if its conduct "actually kills or injures" the elephants. See id.

### **III. FINDINGS OF FACT**

The City owns and operates the Buttonwood Park Zoo. The zoo is an Association of Zoos and Aquariums accredited institution. Trial Tr. Day 3 at 39:14-18, ECF No. 77.

In April 1968, the City purchased Emily, a four-year-old Asian elephant, from Southwick's Zoo (then the Mendon Animal Farm), and transferred her to the Buttonwood Park Zoo. Trial Ex. 4, Association Zoos & Aquariums Elephant Profile Form & City New Bedford Board Park Commissioners Letter Dec. 31, 1967 ("Emily Profile & Board Park Commissioners 1967 Letter") 1, 6. There is no evidence to suggest Emily was anything but a healthy, young elephant at the time of the City's purchase. See Trial Tr. Day 3 at 43:25-44:2.

About fifteen years later, however, when Dr. Michael Ryer arrived at the zoo to become a zookeeper, he found that Emily "was not behaviorally adjusted well at all." Trial Tr. Day 1 at 92:11, ECF No. 75. Her living conditions in 1982 were not acceptable, according to veterinarian Dr. Ryer; she was chained in the barn sixteen hours a day on a concrete floor with poor

drainage and no ventilation. Id. at 93:6-19. When Emily returned from her training stay at a zoo in Louisiana, however, she was a changed elephant -- she was able to "be worked without fear of . . . one of the keepers getting hurt," Trial Tr. Day 2 at 18:19-20, ECF No. 76, and she returned to improved living quarters, Trial Tr. Day 1 at 106:9-11.

Ruth is the hard luck elephant. She is somewhat older and a bit (a thousand pounds) smaller than Emily. Trial Tr. Day 1 at 101:24-25; Trial Tr. Day 3 at 78:21-79:6, 80:2-10; Trial Ex. 5, Association Zoos & Aquariums Elephant Profile Form & Arrival Report ("Ruth Profile & Arrival Report") 1. Benson's Animal Farm in New Hampshire once owned her. Ruth Profile & Arrival Report 1.

In 1986, she was found abandoned in a truck on a dump site in Danvers, Massachusetts. Id. at 5-6; Trial Tr. Day 2 at 85:12-17. The Animal Rescue League of Boston apparently took her from there. Ruth Profile & Arrival Report 5, 7. A United States Department of the Interior report from the time she was seized indicates that Ruth suffered several ailments: her ear condition was fair, with one hole and ragged edges on each ear; her skin was fair to poor; her tail and skin had an extreme build-up of necrotic tissue; she had scars on her legs (indicative of excessive chain wear) and chin (more than twenty hook scars); and she was underweight, among other issues. Id.

at 5-6. This report further noted that Ruth was a "striker, hitter, but not to the point of killing," and "[r]epeatedly struck out at keepers." Id.

Ruth's trunk was of particular concern when she was rescued. The 1986 report stated that Ruth had "[l]ittle control of dist[a]l area; no fine control of finger; appears paralyzed in proximal area and peduncle; must use head to swing trunk. Does appear to affect her ability to feed." Id. at 6.

The City soon took possession of Ruth. Id. at 7. Dr. Ryer, then a zookeeper at the City's zoo, confirmed Ruth's partial trunk paralysis and overall poor health upon her arrival at the Buttonwood Park Zoo elephant habitat. Trial Tr. Day 1 at 97:4-10.

In the City's care, Ruth has become docile and, at least in the eyes of the City's zookeepers,<sup>4</sup> she appears affectionate and warmly responsive to her treatment. See Trial Tr. Day 2 at 22:7-17, 77:11-78:6.

Emily is now fifty-five years old. Emily Profile & Board Park Commissioners 1967 Letter 1. Aside from a brief period from November 1983 to July 1985, when she went to Baton Rouge,

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<sup>4</sup> Experts caution against anthropomorphizing elephant behavior and attributing to them human emotions. What is clear is that both zookeepers and attending veterinarians are affectionate toward both Emily and Ruth.

Louisiana for training (during which time the City renovated her barn), Emily Profile & Board Park Commissioners 1967 Letter 1; Trial Tr. Day 1 at 93:21-24, 96:7, Emily has resided at the Buttonwood Park Zoo, for apparently forty-nine of her fifty-five years. Id.<sup>5</sup>

Ruth, however, was approximately twenty-eight years old when she was rescued by the Animal Rescue League of Boston, seized by the United States Department of the Interior, and delivered into the City's care. Ruth Profile & Arrival Report 1, 5. She is thus approximately sixty-one years old and has resided at the Buttonwood Park Zoo for the last thirty-three years, together with Emily. Id.

Emily and Ruth are thus among the oldest living Asian elephants in a zoo setting in America. See Trial Ex. 15, Robert J. Wiese & Kevin Willis, Calculation of Longevity and Life Expectancy in Captive Elephants, 23 Zoo Biology 365-73 (2004) (estimating average life expectancy for Asian elephants in captivity in North America at 44.8 years).

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<sup>5</sup> Indeed, because Emily's captivity predates the classification of Asian elephants as endangered in 1976 and the Endangered Species Act itself in 1973, some of the Endangered Species Act's protections may not apply to her. See 16 U.S.C. § 1538(b). Critically, however, the Endangered Species Act's prohibition on taking does protect Emily. See id.; Am. Soc'y for the Prevention of Cruelty to Animals v. Ringling Bros. & Barnum & Bailey Circus, 502 F. Supp. 2d 103, 107-10 (D.D.C. 2007).

Over the years Emily and Ruth have spent at the City Zoo, elephant husbandry has undergone a near complete reversal. Years ago, elephants were managed by guides or bullhooks -- think a maharajah's mahout with his goad. Touching the elephant at a guidepoint with the guide led a trained elephant to exhibit the desired behavior; i.e. moving, stopping, and the like. Advanced training might include kneeling, stepping up on a pedestal, raising one or two legs, holding a banner in her trunk -- you get the idea.

Today, the zookeepers allow the elephants to roam at will throughout the zoo's habitat, which seeks to replicate -- as far as possible -- the elephants' natural surroundings. Elephants are enticed by the prospect of forage out of their barn to allow for its cleaning. Today, human contact with the elephants is kept to a minimum. While the elephant caretakers routinely have "hands-on" contact with the elephants, they do so almost exclusively "through a protective barrier." Trial Ex. 16, Elephant Mgmt. Policy & Elephant Keeper Handbook (Buttonwood Park Zoo 9th ed. 2018) 4, 9. But see Trial Ex. 17, Buttonwood Park Zoo Protocols for Sharing Unrestricted Space with Elephants 2018.

Rowley faults the City for being behind the curve in every respect. The Court finds the contrary to be true. Indeed, commendably, the City has supported its zoo with an adequate

budget; has attracted a cadre of dedicated, professional, empathetic, and innovative zookeepers; and has employed top notch veterinarians wherever necessary. The pace of change at the City Zoo has been commensurate with the evolution of elephant husbandry. Hydraulic fences limn the elephant stalls within their barn, allowing the elephants to move as the zookeepers desire without the need for guides. The barn's concrete floor has been covered with thick sand (easier on the elephants' feet), and sand is banked up against one wall of each stall so an elephant at rest leans against a sand bank rather than kneeling and lying down (more difficult for geriatric elephants with aging joints). Outside, forage is made available not only on the ground but on a raised, lattice-like wooden structure which seeks to replicate the elephant's natural environment and encourages her to exercise her trunk to seek out food where it would normally be found in the forest.

The zoo's accomplishments are not, however, an unbroken record of evolving improvements (although this is generally so). The elephant barn lacks a hydraulic hoist (to lift an elephant if necessary in case of injury or sickness), and the roof still leaks (although not over the animal spaces). More seriously, human negligence is not unknown. In January 2014, the door to the elephant barn was left unlocked and Ruth wandered out into a New England blizzard, suffering frostbite to her ears, vulva,

and tail. Trial Ex. 19, USDA Settlement Agreement 3; see also Trial Tr. Day 2 at 90:9-91:13.

There are larger issues as well. Asian elephants range naturally across the Indian sub-continent<sup>6</sup> and throughout Southeast Asia<sup>7</sup> and the Indonesian archipelago. Now New Bedford, Massachusetts has many fine attractions, but lush tropical forests and mangrove swamps are not among them. The elephant habitat at the City Zoo is somewhat larger than 3/4 of an acre and, while one could possibly conjure the dusty Deccan plains (ignoring the New England white oaks), by no stretch of the imagination could anyone believe these two elephants live in their "natural" surroundings.

The zookeepers ensure that Emily and Ruth have delicacies like bamboo in addition to their normal diet of hay and livestock grains. See Trial Tr. Day 3 at 32:22-33:14; Trial Tr. Day 2 at 70:7-10. Moreover, in collaboration with the Massachusetts College of Art and Design, the zookeepers have

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<sup>6</sup> Alexander faced Porus' Asian elephants at the Hydaspes in 326 B.C.E. The British used them as pack animals on the march from Kandahar to Kabul during the ill-fated invasion of Afghanistan, 1839-1842. See William Dalrymple, Return of a King (Knopf 2013); George MacDonald Fraser, Flashman (Plume 1984).

<sup>7</sup> See Croke, supra. For a sensitive, albeit Western, discussion of the terrain and its peoples, see generally the distinguished author John Masters, Bugles and a Tiger (Viking 1956) and The Road Past Mandalay (Harper 1961), the autobiography of his service in the 4th Gurkha Rifles in the old Indian Army.

developed "toys" for the elephants which are intended to maximize elephant dexterity. Emily is said to favor the xylophone. See Trial Tr. Day 3 at 37:13-39:6; Laura Crimaldi, MassArt Students Create Toys for Elephants at New Bedford Zoo, Boston Globe (May 13, 2019), <https://www.bostonglobe.com/metro/2019/05/13/massart-students-create-toys-for-elephants-new-bedford-zoo/EGB79VBrsiZB3TgUjpmnpnO/story.html>.

None of this will do, says Rowley, arguing that Emily and Ruth ought be transported to a 34,000 acre elephant sanctuary in Tennessee to live out the remainder of their lives in a setting more closely resembling their natural habitat. Am. Compl. ¶ 97. She is in good company. See Charles Seibert, The Swazi 17, N.Y. Times Mag. 26-33, 42, 45 (July 14, 2019) (arguing that elephants ought not be kept in captivity at all).

Important as these larger issues may be, they are beyond the purview of this Court, immaterial because they are of no legal consequence to the outcome of this action. See Fed. R. Evid. 401. This is an action under the citizen suit provision of the Endangered Species Act. 16 U.S.C. § 1540(g). That Act, as the Fish and Wildlife Service has authoritatively interpreted it and in conjunction with the Animal Welfare Act, contemplates that endangered species may be kept in captivity. See 50 C.F.R. § 17.3 (excluding from the definition of "take," as "applied to captive wildlife," "generally accepted" husbandry practices

satisfying Animal Welfare Act standards); 7 U.S.C. § 2131 (explaining that the Animal Welfare Act is designed to “to insure that animals intended for . . . exhibition purposes . . . are provided humane care and treatment”). The reference standard for an endangered species in captivity is not a goal requiring the least restrictive environment or the most natural possible setting. Rather, it is generally accepted and appropriate animal husbandry. See 50 C.F.R. § 17.3. This is a familiar concept, taught by 4-H groups to youth across the nation. When I was growing up, the Boy Scouts offered a merit badge in Animal Industry. See Boy Scouts of America, Handbook for Boys 509 (New York: Boy Scouts of America, 1943).

Therefore, important as the questions posed by Rowley and Seibert may be, this Court eschews analyzing them and, having made its findings of fact, turns to the specific legal issues which require the Court’s attention. The Court will make additional, issue-specific findings where necessary.

#### **IV. RULINGS OF LAW**

##### **A. Veterinary Care**

By mandate of the Code of Federal Regulations, “[e]ach . . . exhibitor shall have an attending veterinarian who shall provide adequate veterinary care to its animals.” 9 C.F.R. § 2.40(a). The attending veterinarian must be employed “under formal arrangements,” id. § 2.40(a)(1), and must have the

authority to provide and oversee adequate care, id.

§ 2.40(a)(2). In addition, the "exhibitor shall establish and maintain programs of adequate veterinary care that include . . . [t]he use of appropriate methods to prevent, control, diagnose, and treat diseases and injuries, and the availability of emergency, weekend, and holiday care." Id. § 2.40(b).

A zookeeper inspects Ruth and Emily each morning and completes a "Daily Animal Health Checklist." Trial Tr. Day 1 at 46:10-47:17. If any issue comes up, the zookeeper gets in touch with the Zoo's "elephant manager and the vet staff, the staff veterinarian or even the vet technician" promptly to resolve it. See id. at 47:7-17.

From at least 2000 to 2005, the City employed a full-time on-site veterinarian at the Buttonwood Park Zoo, Dr. Ryer. Id. at 112:8-11, 115:15. It is not clear when in the course of the next ten years the City employed a full-time on-site veterinarian, but the Zoo regularly called in Dr. Ryer for a consultation when medical issues arose. See id. at 118:13-119:1. One witness testified that when the City employed no full-time on-site veterinarian, it contracted with a veterinarian who would visit the elephants once per week. See id. at 47:18-48:3.

As of July 30, 2015, the City once again employed a full-time on-site veterinarian, Dr. Elizabeth Arnett-Chinn. Trial

Ex. 8, Independent Panel Review Buttonwood Park Zoo Elephant Program ("Independent Panel Review") 3. Although she subsequently resigned, the record also reflects that the City employed a full-time on-site veterinarian in 2018, see Trial Ex. 10, Final Report Visiting Committee Accreditation Commission ("Final Report Accreditation Commission") 8, and also did so at the time of the trial, see Trial Tr. Day 1 at 47:18-23.

In 2016, Ruth developed a severe gastrointestinal issue. Absent competent and professional veterinary care, there was a strong probability she would die. Trial Tr. Day 2 at 22:24-24:8, 27:3-9. The City provided such care, providing not only care through the Zoo's staff veterinarian but flying in a renowned large animal veterinarian from Tennessee to care for Ruth. Id. at 24:13-25:8. The medical team employed enemas to re-hydrate Ruth. Id. at 25:13-22. This process consisted of injecting 30 to 60 gallons of an electrolyte solution into the elephant's rectum three or four times a day for one week using clean 30-gallon trash buckets and a hose. Id. at 25:13-26:6. Ruth was compliant throughout the entire process, despite simultaneously undergoing other procedures such as having her blood drawn, a fact that the veterinarian attributed to her own positive relationship with Ruth and to the elephant's trust in the zookeepers. Id. at 26:10-27:2.

Ruth also receives phenylbutazone, a non-steroidal anti-inflammatory medication that treats her arthritis. Trial Tr. Day 1 at 129:1-10; Trial Tr. Day 2 at 4:20-5:5.

As the findings above exemplify, Ruth (and Emily) have received and are receiving adequate veterinary care in all the respects required by 9 C.F.R. § 2.40. The City's veterinary care practices were "generally accepted," 50 C.F.R. § 17.3, given that a qualified professional oversaw them, and, in times of unusual crisis, profitably consulted with between five and ten "elephant veterinarians around the country." Trial Tr. Day 2 at 24:11-20. The veterinary care that Ruth and Emily receive does not "actually injure" them. See 50 C.F.R. § 17.3. Thus, this Court rules that the City has provided generally accepted, Animal Welfare Act-compliant veterinary care for Ruth and Emily. The City's veterinary care for Ruth and Emily neither harms nor harasses them.

#### **B. Food and Shelter**

The Court finds and rules that Emily and Ruth are provided wholesome, palatable food free from contamination in sufficient quantity and nutritive value to maintain them in good health. Trial Tr. Day 3 at 33:2-14. Thus, the City complies with applicable nutrition regulations. See 9 C.F.R. § 3.129(a) ("The food shall be wholesome, palatable, and free from contamination and of sufficient quantity and nutritive value to maintain all

animals in good health." ). Further, the Visiting Committee to the Accreditation Commission of the Association of Zoos and Aquariums found in 2018 that the Buttonwood Park Zoo provides the animals in its care with "diets of adequate quality and quantity" that are "prepared and stored hygienically" and "provided in a way that promotes the physical and psychological well-being of the animals," which supports the Court's conclusion that the elephants' diet is also generally accepted. See Final Report Accreditation Commission 10.

Regarding shelter, the Code of Federal Regulations requires that elephants, among other warmblooded animals, be housed in "structurally sound" facilities "in good repair," 9 C.F.R. § 3.125(a), with adequate water and power, id. § 3.125(b), as well as proper means of storing food, disposing of waste, and maintaining cleanliness, id. § 3.125(c)-(e). The City's outdoor facilities must provide the elephants shelter from bothersome sunlight and inclement weather, while being properly drained and fenced. Id. § 3.127. And there must be enough "space to allow each animal to make normal postural and social adjustments with adequate freedom of movement." Id. § 3.128.

The Zoo's elephant barn is appropriate to the local New Bedford climatic conditions and is otherwise suitable for housing these two elephants. While USDA-APHIS sanctioned the City in 2014 for allowing Ruth to get out during a blizzard, see

Trial Ex. 1, Citation & Notification of Penalty; Trial Ex. 19, USDA Settlement Agreement 3; Trial Tr. Day 2 at 90:9-12, the City has since made substantial renovations to the barn, and no such incident has recurred. See Final Report Accreditation Commission 27. Specifically, each elephant has adequate freedom of movement within the barn and sufficient space to stand, drink, and sleep. See id.; Trial Tr. Day 1 at 36:10-24 (zookeeper testifying to automated water system in barn that Ruth and Emily can reach with their trunks); Trial Tr. Day 2 at 68:13-24.

Further, the City provides shelter to Ruth and Emily that is in accordance with generally accepted animal husbandry practices. See Final Report Accreditation Commission 7.

The Court thus rules that the City fully complies with 9 C.F.R. §§ 3.125, 127, 128, & 129.<sup>8</sup> The City's accreditation by the Association for Zoos and Aquariums, which sets standards for animal care above the minimum standards required by Animal Welfare Act regulations, supports the Court's conclusion that the shelter and food that the City provides the elephants are consistent with generally accepted animal husbandry practices

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<sup>8</sup> The Court rules only on Rowley's request for prospective relief. See Am. Compl. ¶¶ 104-06. Although the Court observes that Ruth's frostbite may have constituted "harm" under the Endangered Species Act, the Court holds that the City is not causing Ruth "harm" today. See Final Report Accreditation Commission 27.

and do not harm or harass them. See Final Report Accreditation Commission 7, 10; Trial Tr. Day 3 at 39:14-18.

**C. Social Opportunities and Enrichment**

The Department of Agriculture has not promulgated any regulations imposing standards for socialization and enrichment for the psychological wellbeing of animals that are not primates. Cf. 9 C.F.R. § 3.81; Kuehl, 161 F. Supp. 3d at 710-11 (ruling that keeping lemurs -- primates -- in social isolation was harassment). In addition, the parties have not introduced evidence that maintaining two Asian elephants in captivity together satisfies the "generally accepted" standard in the captive wildlife exclusion to a harassment-based take. See 50 C.F.R. § 17.3.

Thus the Court considers whether a lack of social opportunities for Ruth and Emily amounts to a "take" under the Endangered Species Act, which is to say, "an act which actually kills or injures wildlife" or "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." See id.

Emily and Ruth (female Asian elephants) are the only two elephants in the care of the City. Although Emily and Ruth may well feel lonely at times, the evidence does not establish that

the City's actions have significantly disrupted their normal behavioral patterns in an injurious manner.<sup>9</sup>

As for enrichment, the general fact-finding above limns the innovative efforts of the City's zookeepers to enrich the elephants' existence. In Kuehl, the court held that captive

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<sup>9</sup> A significant area of dispute at trial was whether Emily and Ruth engage in stereotypic behaviors. Stereotypic behaviors are behaviors with no purpose, Trial Tr. Day 1 at 41:5-9, which can indicate a captive animal's mental stress, see Graham, 261 F. Supp. 3d at 717-18. Rowley suggests that Ruth's and Emily's repetitive behaviors are "abnormal behavior" and thus are per se evidence that the City's actions or inaction "significantly disrupt [their] normal behavioral patterns," 50 C.F.R. § 17.3. See, e.g., Trial Tr. Day 1 at 7:20-8:2.

If the evidence leaned in favor of a conclusion that Ruth and Emily regularly do engage in stereotypic behaviors, not just normal anticipatory ones, that could be evidence of harm or harassment under the Endangered Species Act. Cf. Graham, 261 F. Supp. 3d at 749.

Rowley elicited evidence at trial that Ruth and Emily engage in the behaviors of swaying, bobbing, and pacing. See Trial Tr. Day 1 at 42:4-12, 73:20-74:11. She failed, however, to prove that these behaviors are stereotypic.

The evidence at trial was mixed at best as to whether Ruth and Emily engage in stereotypy. See, e.g., Trial Tr. Day 1 at 39:10-40:8 (zookeeper describing Ruth and Emily's swaying, bobbing, and pacing as anticipatory, not stereotypic, behavior); id. at 42:4-19 (same); id. at 73:20-74:6 (former elephant keeper testifying that the elephants' "swaying" is a result of them "trying to get our attention" and is thus more "anticipatory" than "stereotypic[]"); Trial Tr. Day 3 at 113:6-114:17 (Rowley describing video footage of Emily and Ruth while eating and swaying as "stereotyping").

Rowley failed to carry her burden of proving that Ruth and Emily regularly engage in stereotypic behaviors, and, moreover, did not prove that the City's action or inaction caused the behaviors that she describes as stereotypy. Accordingly, the Court cannot rule that the elephants' repetitive behaviors evidence that the City has actually injured them or significantly disrupted their normal behavioral patterns.

tigers were not harassed or harmed by a psychologically dull environment even when they were provided only "nominal" enrichment. 161 F. Supp. 3d at 718. Emily and Ruth are not so impoverished. The Court rules that the City follows adequate and generally accepted animal husbandry practices in these regards. Moreover, there is insufficient evidence to establish the likelihood of significant disruption of normal behavioral patterns.

**D. Failure to Protect Ruth**

This is the most difficult issue in this case.

Rowley claims that the City has allowed Ruth to be harassed and harmed over the years through Emily's aggressive actions toward her. Indeed, years ago, Emily bit off the tip of Ruth's tail. Trial Tr. Day 1 at 63:5-25. Years later, after the frostbite incident, when Ruth's tail was bandaged up, Emily (perhaps out of curiosity) used her trunk to toy with the bandage, causing Ruth to squeal in apparent pain and move away. Sporadically over the years there have been incidents where, while Ruth has been peacefully feeding, Emily has come up and shouldered her out of the way in order to enjoy that particular foodstuff herself. There is ample available food and Ruth, although dispossessed, shambles off to feed elsewhere. Ruth is not malnourished.

Rowley, albeit a keen and frequent visitor to the City's elephants, is neither a zookeeper nor a veterinarian. She characterizes these incidents as "attacks" by Emily upon Ruth. The zookeepers consider them normal dominant animal behavior (Emily being the larger and heavier elephant). See, e.g. Trial Tr. Day 1 at 60:17-18, 62:20-25, 64:1-65:18. The skilled veterinarians who testified tend to side with the zookeepers but are quick to point out that only a specialist in elephant behavior could give a sound answer.

Under the Fish and Wildlife Service's regulations, to "harm" an endangered species means intentionally or negligently to engage in "an act which actually kills or injures wildlife," and encompasses conduct "significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." 50 C.F.R. § 17.3. As stated above, to "harass" such a species means:

[a]n intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Id. One may thus violate the "harassment" requirement without actually causing "harm" to wildlife. See Hill, 867 F.3d at 511 (observing that "the regulatory definition of harass contains requirements that are less demanding . . . than are the requirements contained in the regulatory definition of harm").

In the absence of directly applicable expert testimony about elephant behavior, and recognizing that Rowley bears the burden of proof, this Court concludes that she has not proved that the City was harassing or harming Ruth in violation of the law by negligently allowing Emily to attack her.

Then, a few days ago, Rowley filed a "motion to confiscate" in which she raises some new and disturbing allegations, viz. as a result of increased elephant conflict, the City's zookeepers have restricted Ruth's access to the outer barn, causing her emotional and physical distress. Mem. Favor Confiscation ("Confiscation Mem."), ECF No. 86; see also Suppl. Mem. Favor Forfeiture, ECF No. 90.

Even as alleged by Rowley, it appears that the City's response is precisely what responsible elephant management requires. Rowley's allegations in the motion to confiscate suggest that the zookeepers have decided to provide separate feedings to the two elephants to ensure that Ruth gets adequate nutrition despite Emily's displacement behaviors, see Trial Tr. Day 2 at 95:4-96:15. Confiscation Mem. 3. Rather than proving that the City fails to protect Ruth from Emily's aggression, see id., these allegations demonstrate that the City is proactively responding to changes in the social dynamic between the two elephants to ensure that both animals are comfortable and are able to meet their needs to the extent possible.

Some of Rowley's allegations in her latest motion raise some concerns for the Court about the City's provision of adequate shelter during the summer months. See Aff. Joyce Rowley ¶¶ 6-7, 10-14, ECF No. 87. Rowley is not an elephant expert, however, nor is this Court. Accordingly, Rowley's allegations here do not suffice to persuade the Court that it ought revise its rulings in this case.

**V. CONCLUSION**

For these reasons, the Court finds and rules that there has been no violation of the Endangered Species Act. Judgment shall enter for the City.

**SO ORDERED.**

/s/ William G. Young  
WILLIAM G. YOUNG  
DISTRICT JUDGE